Synopsis

Evaluating the effectiveness of the native ad format

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By

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ABSTRACT

The number of worldwide internet users forms an enormously attractive cohort for brands and companies. The internet or online medium presents an interactive platform for brands to advertise and reach users. After buying ad space on websites, advertisers use various advertising formats like banners, pop-ups and native to converse with consumers, concurrently building strong revenue streams for websites.

Online ads have facilitated the availability of free content to users but have also been criticised for degenerating their browsing experience. Faced with multiple disruptions, users react unfavourably, frequently installing ad blockers. When users install ad blockers, they are not exposed to the ads thus reducing the return on advertiser's ad spend. Websites hosting disruptive ads witness visitor dropouts as frequent ad distractions compromise the users' browsing experience. To counter the challenges posed by traditional online ad formats, advertisers are increasingly deploying native ad formats that resemble the surrounding content and contain material that may be of interest to the user.

For an ad to be effective, its presentational features must be conducive to the user's browsing experience. This study assessed the effectiveness of the native ad format (vis a vis. banner ad format) by examining users' cognitive, affective and behavioural responses when they encounter these ads. Additionally, users rationalise their attentional capacity by adopting two different internet browsing styles. Also known as viewing modes, free and goal-oriented browsing determine the user's sensitivity to ads. This investigation incorporated the impact of viewing mode on ad effectiveness.

A 2 (native vs. banner) by 2 (goal-oriented vs. free browsing) independent measures design was adopted to collect the data. This study integrated the distinctiveness effect, psychological reactance theory, limited capacity of attention theory and theory of reasoned action to include constructs of ad

recognition, ad intrusiveness, irritation, intention to click the ad and intention to revisit website. The research model aims to determine which effectiveness measures yield better results under specific conditions; for example, native ads may elicit better memory than banner ads, while the same may not be for the intention to revisit website. Given that mobile phones are the most prevalent mode for accessing the internet, the experiment was conducted using the respondents' mobile handsets, and a total of 185 responses were collected.

PLS-SEM, along with the Process macro, was used to analyse the data. Seven out of eleven hypotheses were supported. Amongst the findings, banner ads were found to cause higher ad intrusiveness than native ads. Ad intrusiveness successfully explained feelings of irritation, which contributed to the formation of attitudes towards both the ad and the website. Goal-oriented browsing compounded the intrusiveness caused by both ad formats while having no effect on ad recognition of the two ad formats.

By amalgamating constructs backed by four different theories, the study explained underlying linkages between presentational features of an ad format, browsing style and effectiveness parameters. The findings will guide practitioners by identifying complementary ad formats to advertisement goals. Finally, this research study submits its limitations and provides areas for future research.

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List of Abbreviations

AD	Advertisement
AD	Advertising
AFOR	Advertising Format
AINT	Advertising Intrusiveness
AREC	Advertisement Recognition
ATTA	Attitude Towards Advertisement
AVE	Average Variance Extracted
DT	Distinctiveness Theory
HTMT	Heterotrait-Monotrait Ratio
INTA	Intention to click on Advertisement
INTW	Intention to Revisit Website
IRR	Irritation
LCAT	Limited Capacity of Attention Theory
NFI	Normal Fit Index
PC	Personal Computer
PLS	Partial Least Squares Regression
PRT	Psychological Reactance Theory
SEM	Structural Equation Modelling
SRMR	Standardized Root Mean Square Residual
TRA	Theory of Reasoned Action
VM	Viewing Mode

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CHAPTER 1 - INTRODUCTION

As of 2024, 67% of the global population were internet users, amounting to 5.44 billion people (Petrosyan, 2024). This is an attractive consumer group every advertiser (or brand) wants to tap. Simply put, websites (or publishers) enable this interaction by letting out advertising (Ad) space on their sites in exchange for rent. While this facilitates advertiser reach, websites create a revenue stream for themselves.

Advertisers constantly vie for online user's attention, often interrupting their browsing experience. These instances of disruption prevent users from consuming media. Such infringement of online experiences evokes pronounced negative reactions from users.

Alternatively, to circumvent such ads, users install blockers that prevent ads from loading on the webpage. Ad-blocking software removes advertising content from a webpage via a technology layer on a device or a network level (WARC, 2019). Statista (2024) data forecasts "that in 2024, ad blocking is expected to cost publishers $54 billion in lost advertising revenue, which is about eight percent of the total projected global digital ad spend of $695 billion".

To tackle user's urge to install ad blockers, advertisers and publishers have resorted to novel online communication tactics. Ads with user-relevant content and assimilative appearance have been increasingly employed in the last decade. This form of online advertising is known as native advertising (Todri, 2022). Hardy (2021) notes that the nativity of an advertisement (AD) can be either in content ("text, images and graphic elements which make up the article/story generally in conjunction with the publisher's team") or in presentation ("ad unit/ vehicles of promotion, of branded content, which look and function the same way as vehicles linking editorial content"). Banner ads also contain "graphic, textual content and a link to the target ad website which

may be external" Usually rectangular, their size varies, often covering 10–15% of the web page (Chatterjee, 2005).

Additionally, a substantial portion of the populace is accessing the internet through mobile devices, so gaining eyeballs for ads is even more challenging. Users are susceptible to interruptions on the mobile, primarily due to the small screen (Truong & Simmons, 2010). Secondly, the ubiquitous nature leaves users vulnerable to disturbances caused by unwanted ads (Heinonen & Strandvik, 2003). Despite the challenging circumstances, the increasing number of users accessing the internet from mobile handsets cannot be ignored by advertisers and websites alike.

Grounded in the assimilative form and function of the native ad format, prior research on native ads can be broadly classified into four sub-categories. The first cohort deals with the ability of users to recognise the persuasive nature of a native ad and the second group of articles investigates users' perception of native (covert) ads. Another set of studies examines the challenges of covert ads in general while the final cohort lays out implications for advertisers and publishers if they opt for native ad formats (Kumar et al., 2025). Publications assessing, the role of viewing mode in user responses to online ads, have included either of the two browsing styles or focussed on a non-native ad format.

A scientific evaluation of the efficacy of native ad formats was found lacking. This study aims to fill the lacuna with the dual aim of increasing website usage (for website owners) and maximising returns on ad spend (for advertisers); Supported by theories, an integrated framework will be put forth to determine the format's potential on, the ability to build ad memory, nature of emotional reactions and the behavioural intentions (of users with respect to the ad and website). Since viewing mode is likely to alter the users' reactions to online ads, both viewing modes i.e. goal-oriented and free browsing will also be incorporated.

Given the depth of the study, the following research questions will guide the enquiry.

1. Which is a more effective ad format between native and banner?
2. What kind of influence does ad intrusiveness have on the format's effectiveness?
3. Does viewing mode enhance or lessen the effectiveness of an ad format?

The objectives of the study are listed below

A. Assess ad intrusiveness of the native and banner ad formats
B. Compare the effectiveness of the native and banner formats
C. Evaluate the role of viewing mode on users' responses to banner and native ad format.

The following chapter presents a brief literature review. Hypotheses are conceptualised and developed in Chapter 3. Chapter 4 presents the research methodology. The data analysis and findings follow. Chapter 6 discusses the results. The concluding chapter details the research implications, limitations and future research areas.

CHAPTER 2 – THEORIES & LITERATURE REVIEW

2.1 Introduction

Unaffected by the passage of time and technology, advertisements continue to operate by taking away viewers' attention from the media they are consuming. This interruption has several drawbacks which will be discussed later on. At the same time, ads can be effective only if they are able to attract and sustain audience attention. While stimulus-driven (bottom-up) attention is involuntary and is a response to visual cues like bright colours, animations, or loud sounds; user driven (top-down) attention is mostly intentional requiring cognitive effort. User driven attention pertains to the individual's decision of allocating attention to a stimulus they deem worthy. (Pashler, 1998). In an online setting, attention allocated to an online ad is shaped by both stimulus- and user-driven attention.

The purpose of this review is to critically evaluate recurring themes in ad formats, and understand the advantages and disadvantages of native ad formats. Previous studies have explored online user behaviour, ad effectiveness and engagement, laying the foundation for explicating ad format's influence on audience responses. Building on these established frameworks, this chapter lays the theoretical foundation for addressing the study's query. It also presents past findings with respect to ad formats, causes of intrusiveness, consequences of ad disruption and challenges of advertising on mobile. The chapter concludes with the research gaps and delineation of the research query.

2.2 Theoretical Review

2.2.1 Distinctiveness Theory

Among the theories of visual attention, the distinctiveness theory (DT) builds upon the distinctiveness /indistinctiveness of stimuli. The theory states that stimuli that are distinct from surrounding elements are in a stronger position to orient attention (Tversky, 1977). The stimulus central to the current study is the native advertising format (AFOR), and assessing its ability to orient visual attention towards itself is one of the critical aspects of this enquiry. Referring to the description of banner ads and native ads, the latter is assimilative in presentation, while banner ads occupy large spaces on the web page. Such objects are also more easily remembered due to their unique traits.

2.2.2 Psychological Reactance Theory

Psychological reactance forms the core of ad intrusiveness, explaining the formation of negative feelings (for instance, irritation) and attitudes and actions when users are prevented from accessing desired content.

Most online ads distract users by either hindering or delaying media consumption. The users thus feel a restriction on their freedom to to consume media. The psychological reactance theory (PRT) aids in understanding users' reactions or responses when they come across online ads in their viewing sessions. The theory postulates that "freedom of behaviour is an important, beneficial, and pervasive aspect of people's lives", and whenever this freedom is threatened, people become motivated to regain it (Brehm, 1966; Brehm & Brehm, 1981). In the context of online ads, ad intrusiveness is defined as a psychological consequence occurring when the audience's cognitive processes are interrupted (Li et al., 2002)

2.2.3 Theory of Reasoned Action

The link between attitude and action performed is underpinned by the Theory of Reasoned Action (TRA). TRA is a psychological framework that suggests an individual's behaviour is primarily influenced by their intentions, which in turn are shaped by their attitudes and perceived social pressures. Attitude here refers to how the user feels about the online ad or website they browse. So, if a user is positively disposed towards an ad, they are likely to develop strong intentions of engaging with it, leading to the actual clicking of the ad. The role of subjective norms is assumed to be negligible as browsing websites and viewing ads are personal choices, generally not privy to others (Mc Coy et al., 2017)

2.2.4 Limited Capacity Of Attention Theory

The limited capacity theory of attention (LCAT) delineates the division of attention when there are multiple stimuli (Kahneman, 1973). It has two main aspects: selectivity and intensity. Selectivity refers to selecting the task to which attention will be allocated, while intensity pertains to the amount of capacity allocated to the selected task. These components illustrate that attention is a limited cognitive resource, naturally divided between simultaneous tasks.

If users have a predetermined task, their cognitive resources are dedicated to finding relevant information (to fulfil the task), leaving fewer cognitive resources for other stimuli. Therefore, goal-oriented browsing mandates that a larger proportion of attention be given to task-relevant stimuli restricting attention to peripheral stimuli (such as online ads). In the absence of a pre-determined task, the user adopts a 'free browsing' style wherein more cognitive resources are available to tend to ads that a user encounters while browsing (Lee & Faber, 2007).

2.3 Review of Literature

This section highlights findings of existing publications, which have delineated constructs directly relevant to the current study.

2.3.1 Antecedents Of Ad Disruption

In the online context, where most ads are displayed without users' prior approval, the ads impinge upon their expected freedom of media consumption. Consequently, the forced exposure slows down or prevents users from viewing what they desire. Though all ads cause some interruption (Riedel et al., 2018), certain ad features and characteristics of the ad environment exacerbate the online browsing experience. Hence, the ad intrusion evokes a negative motivational reaction towards the ad, known as advertising intrusiveness (AINT) (Li et al., 2002).

One of the earliest studies on online ad intrusiveness was by Edwards et al. (2002). The authors used the studied pop-up ad format to determine the causes of ad intrusiveness. It was found that ads matching editorial content and placed at the end of pages were less intrusive. They also discovered ads congruent with editorial content were seen as informative and entertaining, thereby reducing ad intrusiveness.

Ying et al. (2009) explored aspects such as ad value, ad placement, execution quality and their relationship with perceived ad intrusiveness. While ad entertainment and ad informativeness (components of ad value) were inversely correlated to ad intrusiveness, frequency and ad quantity (ad placement) were directly related to ad intrusiveness.

Huo et al. (2021) classified various conditions known to cause ad intrusiveness, including features of advertising, media environment and interaction features. Within features of advertising, 'brand advertised', 'advertisement initiator' and 'ad personalisation' have been mentioned while media environment entails 'supporting medium, e.g. app or website' and 'media ownership for instance paid, free or subscribed'. 'Type of device –

PC or mobile or PC' and 'motivation to access media' are covered by the third category, i.e. interaction features. Given the assortment of elements causing disruptions and ad intrusiveness, it is important to examine the outcomes of such ad encounters.

2.3.2 Outcomes of Ad Disruption

One of the earliest instances of ad aversion towards internet ads was reported by Benway and Lane (1998). While assessing the efficacy of the banner format, authors found that consumers developed 'banner ad blindness' as a defence mechanism to unwanted ads. With time, the nature of devices used, the internet, online ads and users' maturity have advanced. Yoo and Kim (2005) bifurcated user responses to online ads into cognitive and affective types. Cognitive referring to thoughts and mental processes, and affective responses referring to emotions felt. Behaviour or intention to behave after encountering an ad represents the act of engaging or disengaging with the ad. While advertisers strive for ad-user engagement and brand purchase, website owners track behaviour through website revisits and site recommendations.

In terms of cognitive measures, ad memory pertains to the user's ability to recall ad content such as brand message, brand logo and product features. Retention of ad content has a significant bearing on the ad's effectiveness as it aids in driving users towards transactional engagement with the company.

Extant literature has used advertisement recall and advertisement recognition (AREC) for measuring ad memory (Janiszewski, 1998; Li & Bukovac, 1999; Diao & Sundar, 2004; Van Reijmersdal, 2011; McCoy et al., 2017).

Affective and behavioural responses to ads and ad formats—pop-ups, interstitials, video ads, spam emails and so forth have been recorded to ascertain effectiveness. Emotions such as annoyance, irritation and behavioural outcomes like intention to click on ad, willingness to purchase the product, and intention to revisit host website deteriorated in the presence

of rising ad intrusiveness. These studies had categorically recorded respondents' ad intrusiveness. (Edwards et al., 2002; Fuxi et al., 2009; Morimoto & Macias, 2009; Truong & Simmons, 2010; Neben & Schneider, 2015; Goodrich et al., 2015; McCoy et al., 2008; McCoy et al., 2017)

Some investigations have documented the fallout of interruptive advertising practices without including advertising intrusiveness. Here, too, compelling features such as forced exposure, design elements of ads (like font style and colour), ad repetitions, among others, lead to poor user responses. Ultimately, the consequences were undesirable for the advertisers and website owners, e.g., low click-through rates for website owners (Cho & Cheon, 2004; Lohtia, et al., 2003) and diminished brand equity (Shapiro et al., 1997; Yaveroglu & Donthu, 2008).

2.3.3 Native Advertising

Published research on native advertising emerged in 2014, wherein authors discovered that respondents could identify banner format as advertisements but not the native format. In the following years, several studies explored nuances of adequate ad disclosures, including its placement and design (Wojdynski and Evans, 2016; Evans et al., 2017).

Subsequently, Wang and colleagues (2019) established that the display position of native ads minimally affected ad clicks (publisher metrics), but conversion (parameter of interest to advertiser) fell drastically when the native ads appeared further down in a web page.

Yang and Jiang (2021) identified a potential underlying mechanism to explain how ad-media congruence influenced user responses to native ads on social media. Results revealed that ad intrusiveness mediated the relationships between congruence constructs and consumer's engagement intentions. Findings specifically showed stronger consumer engagement intentions through reduced perceived ad intrusiveness.

Using native ads, Keyszr et al. (2022) found that, users who perceived ads as personalised for them felt a positive connection with the brand advertised. The underlying reason was the relevance of the ad and absence of intrusiveness. Consequently, this resulted in a more favourable attitude towards the brand with a positive click intent.

2.3.4 Goal-Directed Behaviour Vs. Free Browsing Behaviour

In online browsing, goal-directed consumers invest greater effort and cognitive resources into goal-relevant information sources, such as web pages or advertisements, to achieve their predefined objectives (e.g., comparing laptop prices). In contrast, for non-goal-directed consumers, "activities are not driven by specific goals or outcomes but rather by the experience of the

process itself. For such individuals, online navigation is typically intuitive and spontaneous (Wang, Wang, Farn 2009).

Using eye-tracking data, Hong et al. (2021) examined direct and combinatorial effects of three animation elements namely, motion, looming and lagging, on the ability to capture online consumers' attention. Their study deduced that ad recall of animated ads improved in the absence of a pre-determined task. Similarly, Simonetti & Bigne (2022) reported that users attended more closely to banner ads and that click rates were higher when users were in a free browsing mode.

2.3.5 Mobile Device Vs. PC

The mobile phone has primarily been a device for communication, while the PC has served processing and transmission purposes (Okazaki, 2009). Owing to the ubiquitous nature of the device and its screen size, challenges for advertisers and publishers amplify when users encounter ads on mobile (optimised) websites (Kim et al., 2023)

Two recent studies contrast user responses to identical websites or advertisements when accessed from the two devices i.e. the mobile and personal computer (PC). Using an experimental design, Xie et al. (2024) found that ads on mobile sites attracted less attention than those on PC. The smaller and narrower screens of mobile devices result in smaller ads, making them less prominent (Janiszewski 1998) and reducing the cognitive demand required for consumers to engage with them.

Using viewport logging and eye tracking, Schmidt and Maier (2022) observed that ad recall on mobile phones was lower compared to that on PC. Their findings indicated different ad avoidance patterns (mobile users spent more time in peripheral viewing vs. PC users focussed on screen centre) across devices. The authors attributed this to the smaller screen of the mobile device

and the hand-eye coordination for ad dismissal (mobiles require fixation on the ad before scrolling it out of the screen).

Regardless of optimised mobile websites, personalised web pages and adapted functionality, ads on mobile internet amplify intrusiveness. Research efforts, thus far, have analysed antecedents and outcomes of native ads, but these have been mainly in the context of large-screen device.

2.4 Gaps In Literature

Despite having divergent interests in the performance of online ads, both host websites and advertisers seek user-friendly online ad formats (AFOR). While publishers want to increase visitors to their websites, advertisers need to assess ad performance to meet advertising goals. Given that the internet is an interactive medium, ads interrupting users' browsing experience can negatively impact the advertiser and host website.

Researchers have examined the correlation between individual characteristics of online ads and the interruptions/intrusiveness they cause. Majority of studies have considered conditions of ad exposure and/or ad characteristics (duration of ad exposure, contextual congruence, informative and entertainment value of the ad, ad's ability to obscure content, user's control over ad closure, size and shape of ad, frequency, animation levels, push vs. pull ads) that cause ad intrusiveness, consequently evaluating ad effectiveness.

Notwithstanding existing research on native advertising, the need to evaluate the ad format is critical now more than ever as more than half the world's population logs onto the internet through mobile phones. By and large, native ads have demonstrated their ability to offer users a non-disruptive browsing experience (Campbell & Marks, 2015; Wojdynski, 2016[a]), in turn weakening the urge to install ad blockers.

The aim of this research is to address advertisers' and publishers' interests by assessing the effectiveness of the native ad format (versus an established online ad format: banner ad format). Cognitive, emotional, and behavioural responses to both ad formats will be compared for a comprehensive assessment. Additionally, by taking account of users' navigation routines or viewing modes (VM), this research aims to define the circumstances for optimal use of native ads.

The objectives are presented once again, along with the constructs.

A. Assess *ad intrusiveness* of the ad formats (in order to determine their effectiveness)

B. Compare the effectiveness of the formats (as indicated by *ad recognition, irritation* and *behavioural intentions*).

C. Evaluate the interaction effects of ad format and viewing mode on *ad intrusiveness* and *ad recognition*

CHAPTER 3 – CONCEPTUAL FRAMEWORK AND HYPOTHESES FORMATION

3.1 Conceptual Framework

In explaining the attention demanded by an ad's presentational features, the distinctiveness theory posits that a stimulus that appears distinct from its surroundings will attract more attention. Disruption by an ad is explicated by the psychological reactance theory. Termed as advertising intrusiveness, this occurs when a user's cognitive processes are disrupted by an advertisement. In order to get back to the browsing activity, users establish coping mechanisms. These can be emotional (irritation) and/ or behavioural and/ or cognitive. Attitudinal responses are predictors of behavioural intentions as postulated by the theory of reasoned action. The limited capacity of attention theory is also integrated in the framework to understand the role of viewing mode and its influence on advertising intrusiveness.

The conceptual framework puts forth the constructs, their supporting theories, and the hypothesised direction of relationships.

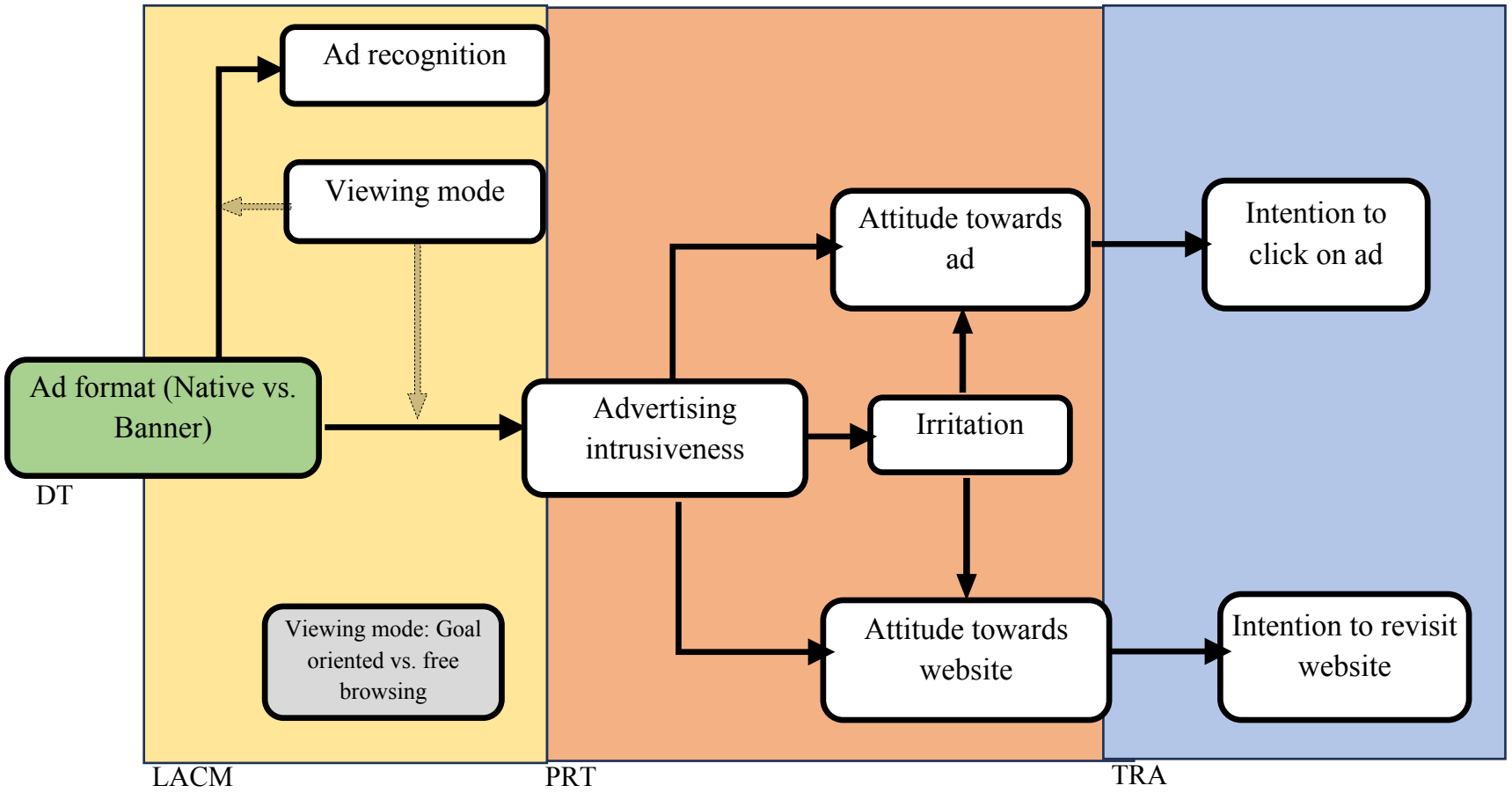

Figure 3. 1 Conceptual Framework With Theories

3.2 Hypotheses Formulation

Ad intrusiveness of formats

Most advertisements on the internet are a form of forced exposure unless prior permission has been accorded by the user.

Underpinned by the distinctiveness theory, the following hypothesis explains the ability of an ad format to attract attention. Native ads like in-feed ads take the form, function and appearance of the website's editorial content (Wojdynski & Evans, 2016; Jiang et al., 2017), tending to assimilate with the editorial stories. Banner ads, however, are conspicuous by way of presentation and are in a relatively advantageous position to orient attention. Users are, therefore, less likely to be disrupted by native ads vis a-vis. banner ads.

H_1: Native ad format will cause lower ad intrusiveness as compared to banner ad format

Effectiveness of ad formats –Ad memory as measured by ad recognition

As confirmed by Hong et al. (2004) and Cheung and To (2017), the more a stimulus competes for the user's attention, the more likely it is to be noticed and retained. Since people's attention bends towards a stimulus that stands out from the immediate environment, the native ad format is postulated to generate lower ad recognition in relation to banner ads. Hence,

H_2: Native ad format leads to lower ad recognition than the non-native format

Besides ad memory, advertisers also monitor metrics representing product/ brand wellness while website owners track website visit-related parameters. Addressing the concerns of both parties, emotional and behavioural responses to ad exposure will be investigated next.

Effectiveness of ad formats – Affective outcome as measured by Irritation

An irritating ad is often "provoking, causing displeasure and momentary impatience" (Aaker & Bruzone, 1985). It is believed that perceptions of intrusion often serve as a cause of irritation (McCoy et al., 2012; Sharma et al., 2022). In their paper, Riedel et al. (2018) include annoyance and frustration (though these terms have been used interchangeably in past studies such as Goldstein, 2014) to the list of negative emotions experienced due to advertising intrusion. In line with the literature, the following is proposed.

Mediating hypothesis H_3: The impact of ad format on irritation is mediated by ad intrusiveness such that native ads will cause lower ad intrusiveness (than banner ads), which will lead to lower levels of irritation felt (during exposure to banner ads)

Effectiveness of ad formats – Behavioural intention as measured by Intention to click on ad (via attitude towards ad)

Intention to click on ad has been widely used to assess the effectiveness of ads in engaging the user. (Kim et al., 2019b; Idemudia & Jones, 2015; Mansfield, 2015; Gauzente, 2010). Intentions to click on the ad depend on the attitude towards the ad; both constructs are related as per the theory of reasoned action (Fishbein & Ajzen, 1975).

Users tend to view these interruptions as an infringement on their freedom to browse freely. This hijacking of attention depends on how intensely and for how long the ad prevents the user from returning to the task. The perceived intrusiveness generates a dislike for the ad, which increases with the perceived intrusiveness. Studies by Goodrich et al. (2015), McCoy et al. (2012), Li &

Meeds (2005) affirm the significant linkage between an ad's features, ad intrusiveness and attitude towards an ad.

Hypotheses expressing the relationship between ad intrusiveness and ad intentions are as follows;

Mediating hypothesis H_4: The impact of ad format on attitude towards ad is mediated by ad intrusiveness such that native ads will cause lower ad intrusiveness (than banner ads), which will result in stronger intention to click on ads (vis a vis. banner ads)

Correlational hypothesis H_5: Intention to click on ad will be positively related to the attitude towards the ad.

Effectiveness of ad format - Intention to revisit website (via attitude towards website)

The website experience can be marred by the intrusiveness of the ads encountered on the website, especially when the latter affects the user's ability to view website content (Diao & Sundar, 2004). Graphics and animation laden ads hamper the site's loading often testing users' patience.

Because ads interrupt the consumption of editorial content, ad intrusiveness can cause negative attitudes towards the website. The mediating role of ad intrusiveness in determining attitude towards website was confirmed in studies by Goodrich et al. (2015) and McCoy et al. (2017).

With the support of TRA, H_7 postulates that the intention to revisit website is correlated with the attitudinal construct (e.g., Galletta et al., 2006; Gauzente, 2010)

Mediating hypothesis H_6: The impact of ad format on attitude towards website is mediated by ad intrusiveness such that native ads will cause lower ad intrusiveness (than banner ads), which will lead to stronger attitude towards website (vis a vis. banner ads)

H_7: Intention to revisit (INTW) website will be positively related to the attitude towards the website

Effectiveness of ad formats - Extended role of irritation

In hypotheses 3,4, 5, 6 and 7, the occurrence of irritation, intention of clicking on ad and intention to revisit website have been postulated with the mediating effect of ad intrusiveness; it is also plausible that irritation may marginalise ad intentions and website intentions as well (Morimoto and Chang, 2009; Petrovici et al., 2017). When this happens, irritated users may either dismiss the ad or abandon the website, with diminished chances of returning (McCoy et al., 2017).

These studies guide the formulation of the next two hypotheses, expressing the possible mediating role of irritation.

Mediating Hypothesis H_8: The impact of ad intrusiveness on attitude towards the ad will be mediated by irritation such that, as ad intrusiveness decreases (due to native ads), it will mitigate irritation, which will result in a better attitude towards the ad (compared to banner ads).

Mediating Hypothesis H_9: The impact of ad intrusiveness on attitude towards the website will be mediated by irritation such that, as ad intrusiveness decreases (due to native ads), it will mitigate irritation, which will result in a better attitude towards the website (compared to banner ads).

Interaction of Ad format and Viewing mode

When users have a specific goal, such as finding information, making a purchase, or completing a work task, they are deeply focused on achieving that objective. An interruption, such as an ad, disrupts their progress and is perceived as an obstacle. Further, goal-driven users have a sense of urgency and are sensitive to distractions, which can increase delay in task completion.

In an explanatory mode, the absence of a pre-determined task leaves spare attentional capacity. Users are subsequently predisposed favourably towards stimuli, reducing sensitivity to the presence of ads. Wojdynski et al. (2017) acknowledged the benefits of native ads in providing a non-disruptive browsing experience for goal-oriented users. The following hypothesis considers the ad format, available attentional resources and interruptions caused by online ads.

Moderating Hypothesis H_{10}: Viewing mode will moderate the impact of ad format on ad intrusiveness such that ad intrusiveness caused by banner ad will accentuate more than ad intrusiveness caused by native ads, in goal-oriented browsing.

While each format causes differing levels of interruption, the quantum of attention captured ultimately also depends on how much attention the user is 'willing' to part with. The viewing mode (goal-oriented or free browsing) determines the amount of attention the user can allocate to the web page content and ads. For example, if the user is in goal-oriented mode (e.g., wanting to find the movie timings on a website), attention is demarcated for task-relevant stimuli, leaving fewer attentional resources to take cognizance of ads. Conversely, in the absence of a primary task, more attentional resources are at the disposal to attend to peripheral stimuli such as ads.

Danaher and Mullarkey (2003) studied the effects of the viewing mode on ad memory and found that users in goal-oriented mode remembered less of the ads

viewed. On the other hand, Calisir and Karaali (2008) confirmed the interaction of viewing mode with various aspects of banner ads (e.g., banner location, banner content) on click-through rates and ad memory. Concerning size of banner ads, Li and Bukovac (1999) found that if the banner size was large, click rates would be higher for web surfers than goal-oriented users; however, viewing mode had no impact on small-sized banner ads. In light of these findings, the following hypothesis is proposed;

Moderating Hypothesis H_{11}: Viewing mode will moderate the impact of ad format on ad recognition such that banner ad recognition will increase more in goal-directed mode in comparison to native ad recognition.

3.3 **Summary of Hypotheses**

No.	Alternative Hypotheses
H_1	Native ad format will cause lower ad intrusiveness as compared to banner ad format
H_2	Native ad format leads to lower ad recognition than the non-native format
H_3	Mediating hypothesis: The impact of ad format on irritation is mediated by ad intrusiveness
H_4	Mediating hypothesis: The impact of ad format on attitude towards ad is mediated by ad intrusiveness
H_5	Correlational hypothesis: Intention to click on ad will be positively related to the attitude towards the ad
H_6	Mediating hypothesis: The impact of ad format on attitude towards website is mediated by ad intrusiveness
H_7	Correlational hypothesis: Intention to revisit website will be positively related to the attitude towards the website
H_8	Mediating Hypothesis: The impact of ad intrusiveness on attitude towards ad will be mediated by irritation
H_9	Mediating Hypothesis: The impact of ad intrusiveness on attitude towards website will be mediated by irritation
H_{10}	Moderating Hypothesis: Viewing mode will moderate the impact of ad format on ad recognition
H_{11}	Moderating Hypothesis: Viewing mode will moderate the impact of ad format on ad intrusiveness

Table 3. 1 - Table Of Hypotheses

CHAPTER 4 – METHODOLOGY

The study investigated two aspects of online advertising (ad format and browsing mode) that can impact the performance of the ads. We measured performance in using cognitive, affective and behavioural constructs. A 2 x 2 (ad type: native vs. banner; viewing mode: goal-oriented vs. free browsing) field experiment was conducted, randomly assigning participants to any one of the four treatments.

Each respondent was exposed to one of the ad formats in one of the two viewing modes, following which they were required to enter their responses. The mediating variables – (ad intrusiveness, irritation) and the outcome variables (ad recognition, intention to revisit website and intention to click on ad) were recorded only once at the end of the experiment. The entire experiment was executed on the mobile device.

Before data collection, two pre-tests and a pilot study were conducted. The two pre-tests were done to determine the theme of the experimental website and ascertain users' familiarity with the native ad format. We confirmed the validity of the manipulation as a part of the pilot study. (Podsakoff & Podsakoff, 2019)

4.1 Construct Definitions

The constructs and their definitions are described in the table below. The scale items are established and valid measurements adapted to the context of this study. Subsequently, these were included in the instrument (questionnaire) to measure the concerned phenomenon.

Construct	Definition	Dimensionality/ Items
Ad intrusiveness	Extent to which ads interfere with a consumer's ongoing cognitive processes.	When I saw the ad, I thought it was.... [Distracting, disturbing, forced, obtrusive, interfering, invasive, intrusive] (Li et al, 2002)
Irritation	The negative, impatient, and displeasing feeling of individual consumers caused by various forms of advertising stimuli.	I thought the ad was... [Irritating, Phony, Ridiculous, Stupid, Terrible] (Li et al, 2002)
Ad recognition	The extent to which participants remembered ad content viewed during the study	Yes/ no questions on whether they saw the ad (mix of actual and dummy ads) during the experiment. (McCoy et al., 2008, 2017)
Attitude towards ad	A web user's positive or negative feelings towards a particular ad type	I felt the ad was... [good/ bad. Pleasant/ unpleasant, favourable/ unfavourable] (MacKenzie & Lutz, 1989)
Intention to click on ad	The degree to which users are willing to let ads (particular type) aid them when making decisions on products and services	In the future, I am... [Willing to click, intend to use, intend to click, worth clicking] (Idemudia & Jones, 2015)
Attitude towards website	A user's overall reaction to a website	My overall reactions to the site are...[Terrible-Wonderful, Frustrating- Satisfying, Dull-Stimulating, Difficult-Easy, Inadequate design- Adequate design, Rigid-Flexible, Difficult to explore-Easy to explore] (Galletta et al, 2006)
Intention to revisit website	Likelihood of visiting the website again	I intend to... [Visit site again, use frequently, be a heavy user, recommend this site] (Galletta et al, 2006)

Table 4. 1 Construct Definitions And Items

4.2 Sampling Method

Participants for the study were recruited through convenience sampling. Leads were generated through acquaintances and personal contacts.

The sampling frame was composed of individuals belonging to both genders and between the ages of 20 and 39. Further, they had to have a personal mobile handset, be fluent in English and reside in one of the following metros– Mumbai Metropolitan Region, Delhi NCR, Ahmedabad, Pune, Kolkata, Hyderabad, Chennai and Bengaluru.

4.3 Sample Size

With a statistical power of 0.8, an alpha level of 0.05, and an effect size ranging from medium to large, the sample size was determined following Cohen's guidelines. According to Cohen (1988), an effect size of 0.20 is classified as small, 0.50 as medium, and 0.80 as large. The range of required sample size was between 56 and 124. The sample size used for this study was 185.

4.4 Experimental Set-Up

A fictitious mobile-only website was created to ensure internal validity and minimise interference from existing biases to administer the ad stimuli and viewing mode. Based on a pre-test, the ‘books and literature’ theme was chosen for the hypothetical website (Cheung et al., 2017).The website mimicked a common-interest platform where users could read material pertaining to books and literature. The website was given a novel name - ‘Bookroute’.

The URL for the experimental website was shared with the respondents. Upon opening the link, the ‘consent to participate’ page (Appendix A – Image A1) was displayed. In addition to this page, one page was for respondents to enter details (Appendix A – Image A2), one instruction page (Appendix A – Image A3), one menu page (also known as a feed) containing four editorial pieces and

one advertisement (Appendix A – Image A4). Native ads comprise many sub forms (e.g., search listings, sponsored articles, recommendation widgets) with the same underlying principle of assimilative form and function as other stories on the website. In this study, the native ad format was operationalised using the in-feed ad format. As per the Interactive Advertising Bureau (2015), the in-feed ad format is the most reliable for achieving advertisers' objectives. These ads appear naturally alongside editorial content while users browse apps or websites, creating a cohesive and uninterrupted experience.

Further, five pages showing stories and ad details were also adjoined (Appendix A – Images A5 to A9).

The instructions page manipulated the viewing mode. Respondents in non-goal-oriented or free browsing viewing mode were asked for general feedback about the site (Appendix B). If the respondent was allocated a goal-oriented viewing mode (Appendix C), the page also listed three questions to which the respondent had to find answers. (Zanjani et al., 2011; Liu et al., 2018).

Upon commencing the browsing session, the user saw the menu 'feed'. This feed contained five similar-looking blocks out of which one was the advertisement (Appendix D) and the other four were editorial (each block was composed of a headline that was a clickable hyperlink directing user to the complete article/ story). The ad was placed in the middle of the feed as ad positions can affect the attention they receive (Wang et al., 2019).

In-site navigation was enabled through the 'back' icon placed on the website. This was explicitly incorporated to prevent users from returning to the 'instructions page'. Upon completion of the browsing session, respondents were directed to the questionnaire (APPENDIX E) and navigating back into the Bookroute site was disallowed. Dialog boxes were added, informing users of impermissible actions

While the ad on the experimental mobile website was based on a product (electronic bookmark cum dictionary) congruent to the theme (Li & Meeds, 2005; Burns & Lutz, 2006), the brand name used was fictitious. This was done to rule out any confounding effects of past experiences with existing brands (Dahlen, 2001). The same product and brand were presented in the native ad format and banner ad format.

Participants were free to initiate the experiment at their convenience from their own mobile handset. However, once the experiment link was opened, the activity had to be completed within 30 minutes, or the link would become inactive. Additionally, there was no facility to restart if the task remained incomplete.

4.5 Pretests 1 & 2

Pretest 1 was associated with the selection of a theme for the dummy mobile website. Ten topics were presented to respondents (these respondents did not participate in the main study). They were required to rate the topics on a continuum of 1 to 5 (where 1 was least interesting and 5 was very interesting). The selected topic was one that was neither too interesting nor too boring (Li et al., 2002). The sample size for collecting this feedback was 42, which is similar to Edwards et al. (2002).

Table 4.2 illustrates the basket of topics and the theme selected in terms of moderate interest and least variance, i.e. 'Books and literature' (Mean = 3.14 and variance = 1.05)

Topic	Arts & Entertainment	Books & Literature	Computer & Electronics	Food & Drinks	Health
Mean	3.76	3.14	3.31	3.76	3.62
Variance	1.26	1.05	1.39	1.12	1.12

Topic	Home &	Jobs &	News	Pets &	Science	Sports	Travel

	Garden	Education		Animals			
Mean	3.19	3.69	3.59	3.05	3.22	3.24	4.05
Variance	1.23	1.48	1.03	1.95	1.54	1.89	0.97

Table 4. 2 Pretest 1 - Scores For Various Themes

Pretest 2 pertained to the native format's recognition as an advertisement. Since the native ad format is relatively new in India, it was crucial to test the ad format's recognisability as persuasive and paid content. Taking heed from Kim et al. (2019), the following questions were posed to the respondents: This information (1) tried to persuade me; (2) was created by the brand; (3) was paid for by the brand; and (4) sponsored by the brand. Responses had to be either yes or no. 60 responses were collected, with 30 being shown native ad and 30 being shown banner ad. Table 4.3 depicts the affirmative and negative number of responses to the statements. There were no significant differences in any of the parameters, and both formats were equally recognised as 'sponsored content intended to persuade'.

Format	Tried to persuade me	Was created by a brand	Was paid for by a brand	Sponsored by a brand
Native (Y, N)	25, 5	22, 8	25, 5	20,10
Banner (Y, N)	28, 2	27, 3	21, 9	26, 4
χ^2 and p-value	1.46, p>0.05	2.78, p>0.05	1.49, p>0.05	3.35 p>0.05

Table 4. 3 Recognition Scores For Native And Banner Formats

4.6 Pilot Test

A pilot test (n = 50) was carried out to firstly establish uniqueness of the site, given that familiarity can confound responses. Secondly, to ascertain clarity of the questions and lastly to determine the effectiveness of the proposed manipulation.

Goal-oriented users (set A) were given questions for which answers had to be found in the website's content. Free browsing viewing mode (set B) was induced by providing broad and general instructions without any task. Regardless of the viewing mode, instructions were revealed just prior to the browsing session.

4.7 Manipulation Check

For verifying the success of the treatment conditions, four statements regarding the specificity of purpose (When I was at the Bookroute website; I had a distinct identifiable purpose, I was looking up specific information, I was very focused, I was absorbed in finding specific information) were posed to 59 users (Nadkarni & Gupta, 2007). These statements were included in the pilot study. 29 users responded to set A (goal-oriented browsing) and 30 to set B (free browsing). The alternate hypothesis stated that the mean score of set A responses would be greater than those of set B. T-test revealed a significant difference in the groups with set A users displaying higher goal orientation as compared to set B. $t(57) = 6.905$, $p < 0.05$.

4.8 Data Cleaning And Preparation

Responses were stored in the corresponding Structured Query Language (SQL) database since the questionnaire was filled online. These were promptly downloaded into the Excel software, thus bypassing the requirement of manual data entry. Consequently, this decreased the likelihood of errors linked to manual data entry. However, the data gathered was scrutinised for quality issues.

Out of the 267 links that the participants opened, 64 respondents either abandoned the experiment mid-way or let the link expire after access. These responses were dropped. The remaining 203 responses were scanned for anomalous response patterns, e.g., straight-lining or inconsistent answers (Hair et al., 2022). The final number of usable responses was 185 (Table 4.4).

Stages of data collection	Number of respondents
Unique Links Sent	688
Links accessed	267
Links expired/ abandoned (Removed)	64
Data cleaning (Removed)	18
Total	185

Table 4. 4 Attrition Of Respondents During Data Collection

4.9 Respondents' Demographics

Table 4.4 outlines details of respondents that made up the final data set. The total number of respondents was 185. Female participants accounted for the majority of responses, forming approximately 60% of the sample. There were four age categories: 20 to 24 years, 25 to 29 years, 30 to 34 years and 35 to 39 years.

67 respondents belonged to the '20 to 24' years age group, 25% were in the '35 to 39' years age group while the remaining 50% was split equally between the '25 to 29' years and '30 to 34' years age group.

Mumbai, had 32 % representation in the sample, i.e. 59 out of 185. Together, Mumbai and Delhi residents accounted for 50% of the sample.

Approximately 95% of the respondents spent more than 1 hour accessing the internet via their mobile phone handset, out of which more than 60% were heavy users (115).

Variable	Description	Frequency	Sample %age
Gender	Female	115	62.2
	Male	70	37.8
Age	20-24	67	36.2
	25-29	28	15.1
	30-34	44	23.8
	35-39	46	24.9
City	Ahmedabad	6	3.2
	Bengaluru	29	15.7
	Chennai	12	6.5
	Delhi	35	18.9
	Hyderabad	10	5.4
	Kolkata	24	13.0
	Mumbai	59	31.9
	Pune	10	5.4
Education	Post graduation and above	104	56.2
	Upto 12th standard	14	7.6
	Upto Graduation	67	36.2

Table 4. 5 Demographic Details

Description	Frequency	Sample %age
Less than 1 hour	10	5.4
More than 1 hour and less than 2 hours	60	32.4
More than 3 hours and less than 4 hours	59	31.9
More than 4 hours	56	30.3

Table 4. 6 Time Spent On Mobile Internet Per Day

CHAPTER 5 – DATA ANALYSIS AND FINDINGS

Prior to testing of hypotheses, the measurement model was formed, and sanitary checks were run on the constructs. These included indicator reliability and consistency, as well as convergent and discriminant validity. Given the presence of latent variables and multiple connections between the constructs, structural equation modelling (SEM) was adopted to explain the relationships (Dash & Paul, 2021). Since the relationships in the model have been formed based on existing knowledge & theories and the intent is to verify the use of theories, Partial least square (PLS) regression was applied (Hair et al., 2022). Additionally, this technique requires fewer assumptions about measurement scales and the normality of data sets. Lastly, it allows simultaneous assessment of construct reliability and validity (Hair et al., 2019).

5.1 Measurement Model

The objective of the measurement model, also known as the outer model in PLS-SEM, is to confirm the reliability and validity of the construct measures. This aids in ascertaining the suitability of including them in the path model. (Hair et al., 2022) All constructs in the model were reflective in nature. It is recommended that the assessment of the measurement model be done by evaluating reliability at both the indicator level and the construct level. Validity assessment focuses on the evaluation of two validity types. The first is convergent validity using the average variance extracted (AVE) and the second is discriminant validity based on the Heterotrait-monotrait (HTMT) ratio (Hair et al., 2022; Ringle et al., 2017). The measurement model is presented below (Figure 5.1) while the model indicators are listed in Table 5.1

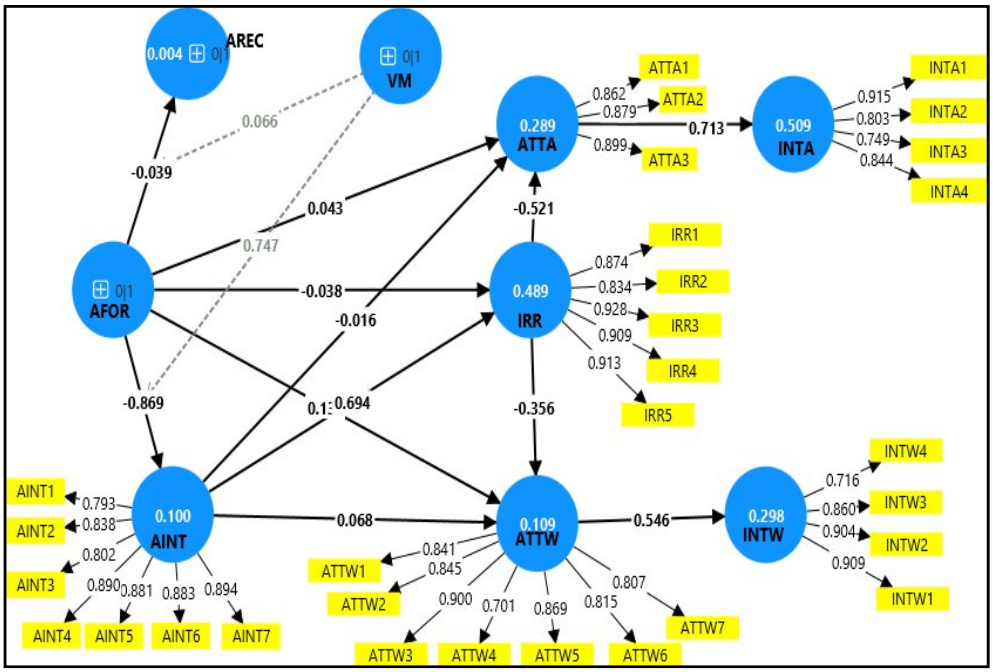

Figure 5. 1 Measurement Model

5.2 Common Method Variance

Data collected through the same method can be flawed due to incidental and random correlation between two constructs. Known as common method variance, the data collected was examined to detect the presence of this irregularity. Assessed through Variance Inflation Factors (VIF) scores of the inner model, Kock's (2017) approach suggests that VIF values greater than 3.3 indicate potential issues with multicollinearity. The VIF values calculated indicate no significant multicollinearity in the model (Table 5.1)

Paths	VIF
AFOR -> AINT	1.98
AFOR -> AREC	1.98
AFOR -> ATTA	1.07
AFOR -> ATTW	1.07
AFOR -> IRR	1.069
AINT -> ATTA	2.011
AINT -> ATTW	2.011
AINT -> IRR	1.069
IRR -> ATTA	1.956
IRR -> ATTW	1.956
VM -> AINT	2.111
VM -> AREC	2.111
VM x AFOR -> AINT	2.886
VM x AFOR -> AREC	2.886

Table 5. 1 VIF Values For Assessing Common Method Variance

5.3 Indicator Reliability And Validity

Constructs and Items	Item loadings	Cronbach alpha	Composite reliability	AVE
AINT1 <- AINT	0.793	0.939	0.939	0.732
AINT2 <- AINT	0.838			
AINT3 <- AINT	0.802			
AINT4 <- AINT	0.89			
AINT5 <- AINT	0.881			
AINT6 <- AINT	0.883			
AINT7 <- AINT	0.894			
ATTW1 <- ATTW	0.841	0.925	0.925	0.685
ATTW2 <- ATTW	0.845			
ATTW3 <- ATTW	0.9			
ATTW4 <- ATTW	0.701			
ATTW5 <- ATTW	0.869			
ATTW6 <- ATTW	0.815			
ATTW7 <- ATTW	0.807			
ATTA1 <- ATTA	0.862	0.854	0.854	0.775
ATTA2 <- ATTA	0.879			
ATTA3 <- ATTA	0.899			
INTA1 <- INTA	0.915	0.848	0.848	0.689
INTA2 <- INTA	0.803			
INTA3 <- INTA	0.749			
INTA4 <- INTA	0.844			
INTW1 <- INTW	0.909	0.876	0.876	0.724
INTW2 <- INTW	0.904			
INTW3 <- INTW	0.86			
INTW4 <- INTW	0.716			
IRR1 <- IRR	0.874	0.936	0.936	0.796
IRR2 <- IRR	0.834			
IRR3 <- IRR	0.928			
IRR4 <- IRR	0.909			
IRR5 <- IRR	0.913			

Table 5. 2 Measurement Model (Reliability And Validity) Indicators

Concerning the suggestions made by Hair et al. (2017), Hair et al. (2022), and Raykov and Marcoulides (2019), the following interpretations were made for reliability and validity indicators in Table 4.6:

Item Loadings: All values are above the recommended threshold of 0.7, which indicates the good quality and relevance of each item for its respective construct.

Cronbach's Alpha and Composite Reliability (rho_c): Both measures show high internal consistency, with all constructs having values above 0.8, indicating that the items within each construct are highly reliable.

AVE: All constructs have AVE values above 0.5, demonstrating that they capture more variance than error, indicating good convergent validity.

Once convergent validity was established, the Heterotrait-Monotrait (HTMT) ratio of correlations was examined to assess discriminant validity. Henseler et al. (2015) have suggested a conservative threshold value of 0.85, which if the HTMT ratio exceeds, indicates lack of discriminant validity. When the constructs in the path model. However, the HTMT ratios of constructs in our conceptual model are well below 0.85, signalling discriminant validity and being distinct from others in measuring the sought phenomenon.

Taking note of the above values, constructs in the measurement model demonstrate strong reliability and validity, with satisfactory item loadings, Cronbach's alpha, composite reliability, convergent validity and discriminant validity. Therefore, no indicators and constructs were removed or revised.

Constructs	AFOR	AINT	AREC	ATTA	ATTW	INTA	INTW	IRR	VM	VM x AFOR
AFOR										
AINT	0.262									
AREC	0.005	0.228								
ATTA	0.138	0.427	0.061							
ATTW	0.109	0.203	0.1	0.506						
INTA	0.119	0.325	0.027	0.836	0.404					
INTW	0.06	0.181	0.102	0.445	0.532	0.425				
IRR	0.201	0.738	0.107	0.599	0.347	0.433	0.235			
VM	0.091	0.061	0.041	0.127	0.083	0.219	0.033	0.034		
VM x AFOR	0.524	0.032	0.003	0.028	0.065	0.076	0.021	0.053	0.6	

Table 5. 3 HTMT Scores For Discriminant Validity

In terms of model fit, the measurement model was deemed adequate as it had a SRMR of 0.065. As per Hair et al. (2022), an SRMR value of less than 0.08 indicates a good model fit. In other words, the model aligned well with the observed data. Additionally, a Normed Fit Index (NFI) of less than 0.9 indicates a good fit (Hair et al., 2022). The NFI value for this model was 0.78, corroborating the adequacy of model fit.

5.4 Structural Model Analysis

In structural equation modelling (SEM), the structural model is crucial for depicting the theoretical relationships between latent variables—constructs that cannot be directly observed but are inferred from measurable indicators. The Process module in SmartPLS4 was applied as mediating, and moderating relationships were included in the model. Process allows estimations when the moderating variable is binary (due to viewing mode; goal-directed vs. free browsing) (Hair, Montoya & Rockwood, 2017). Additionally, the plausible

presence of moderated mediation also called for adoption of the Process module (Hair et al., 2021) along with R^2 values.

For hypothesis testing, Bootstrapping was utilized to derive structural model measures. Bootstrapping works by creating a substantial number of resampled datasets from the original data, which facilitates the estimation of standard errors and confidence intervals for path coefficients in the structural model. A non-parametric bootstrapping approach was applied, involving 10,000 iterations. The results are presented below, with path coefficients and respective p-values in parentheses. The independent variable is indicated by AFOR wherein 1 is the native ad format and 0 represents the banner. Similarly, the moderating variable of viewing mode took on binary values of 1 for goal-oriented browsing and 0 for free browsing.

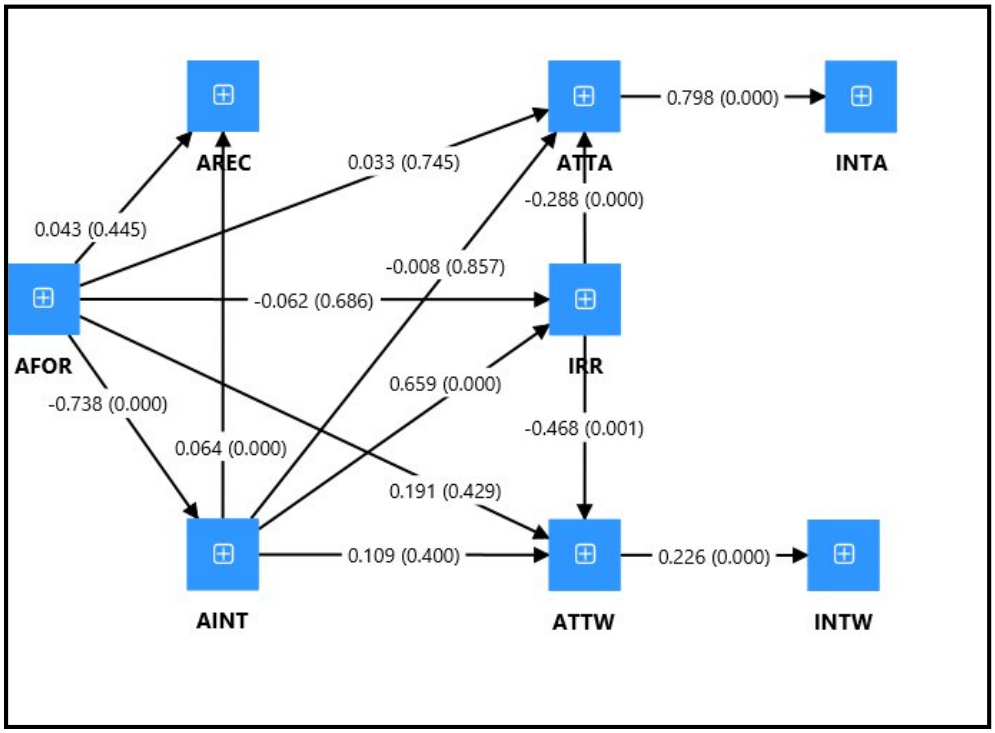

Figure 5. 2 Structural Model

5.5 Hypotheses Tests

5.5.1 Ad Format And Ad Intrusiveness

Hypothesis H_1 relates to the difference in ad intrusiveness caused by the two ad formats.

H_1:Native Ads Cause Lower Ad Intrusiveness Than Banner Ads.

The path coefficient is –0.738 with p-value 0.00 indicating support for H_1

This is interpreted as native ads are perceived as less intrusive than banner ads by a difference of 0.738 units

5.5.2 Ad Format And Ad Recognition

Hypothesis H_2 expresses the difference in ad recognition elicited by the two ad formats.

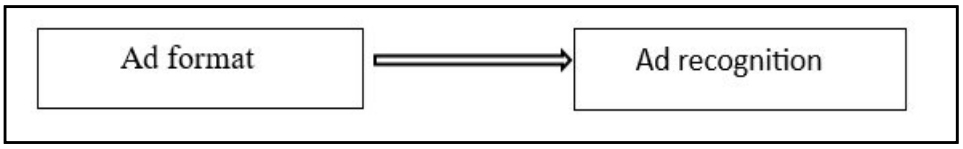

Figure 5. 4 Relationship pertaining to H2

H_2: Native ads elicit lower ad recognition than banner ads.

Path coefficient is 0.043 with p-value 0.445 indicating no support for H_2.

Therefore, we conclude that there is no significant difference in ad recognition elicited by the two formats.

5.5.3 Mediating Effect Of Ad Intrusiveness

Hypothesis H_3 represents the difference in the mediating effect of ad intrusiveness, from ad format to irritation, between the two ad formats.

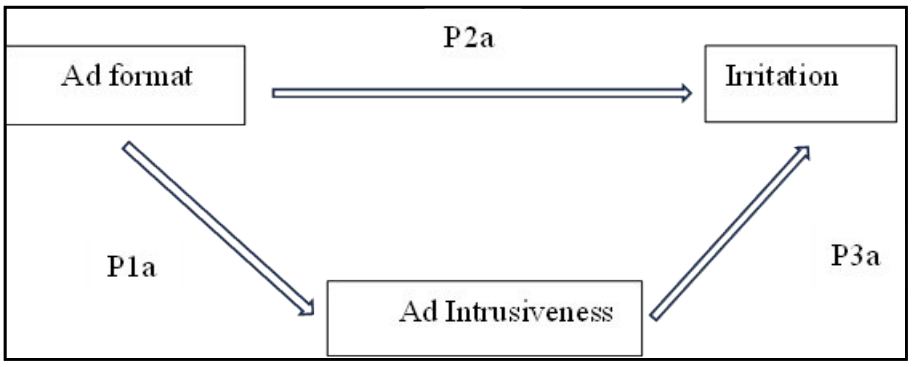

Figure 5. 5 Mediating Effect Pertaining To H3

H_3 postulates that native ads will lead to lower ad intrusiveness, which will cause less irritation than banner ads.

Path coefficient P1a is -0.738 with p-value 0.00, is significant, meaning Ad format (native vs. banner) significantly affects the perceived ad intrusiveness, with native ads being less intrusive than banner ads.

Path coefficient P2a is – 0.062 with p-value 0.343, is significant, indicating ad intrusiveness significantly affects irritation. More intrusive ads lead to higher irritation.

Path coefficient P3a is 0.659 with p-value 0.00 is insignificant, meaning Ad format has no significant direct effect on irritation after accounting for the mediator (ad intrusiveness).

Indirect effects i.e. P1a*P3a is – 0.486 and p-value 0.00 is significant, proving that native ads (compared to banner ads) reduce ad intrusiveness, reducing irritation. In other words, when ad format changes from banner to native, ad intrusiveness decreases, which in turn decreases the irritation caused; even

though ad format itself doesn't have a direct impact on irritation, it indirectly reduces irritation by being perceived as less intrusive (as demonstrated in H_1 native ads are less intrusive than banner ads).

Hypothesis H_4 expresses the the difference in mediating effect of ad intrusiveness, from ad format to attitude towards ad, between the two ad formats

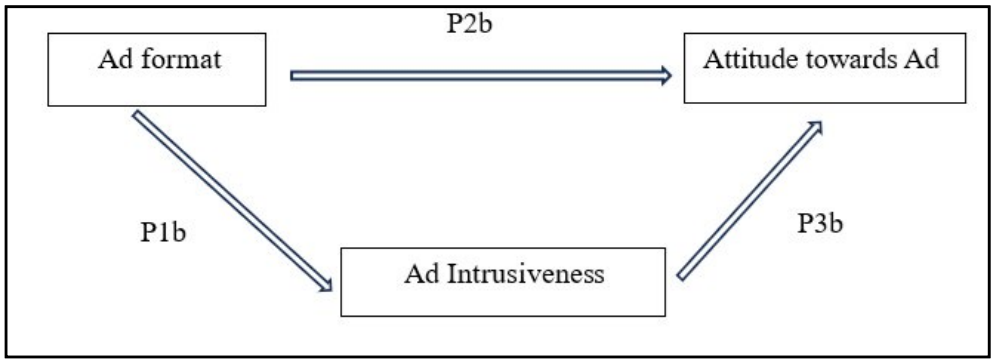

Figure 5. 6 Mediating Effect Pertaining To H4

H_4 postulates that native ads will lead to lower ad intrusiveness, which in turn will cause a more favourable ad attitude as compared to banner ads.

Path coefficient P1b is -0.738 with p-value 0.00, is significant, meaning Ad format (native vs. banner) significantly affects the perceived ad intrusiveness, with native ads being less intrusive than banner ads.

Path coefficient P2b is 0.033 with p-value 0.745, which is insignificant, indicating ad intrusiveness does not affect attitude towards the ad.

Path coefficient P3b is -0.008 with p-value 0.857 is insignificant meaning ad format has no significant direct effect on attitude towards ad after accounting for the mediator (ad intrusiveness).

Indirect effect i.e. P1b*P3b is 0.006 and p-value 0.863 is also insignificant demonstrating that differing levels of ad intrusiveness (due to ad format) do not affect formation of attitude towards ad.

Hypothesis H_6 outlines the mediating effect of ad intrusiveness from ad format to attitude towards website.

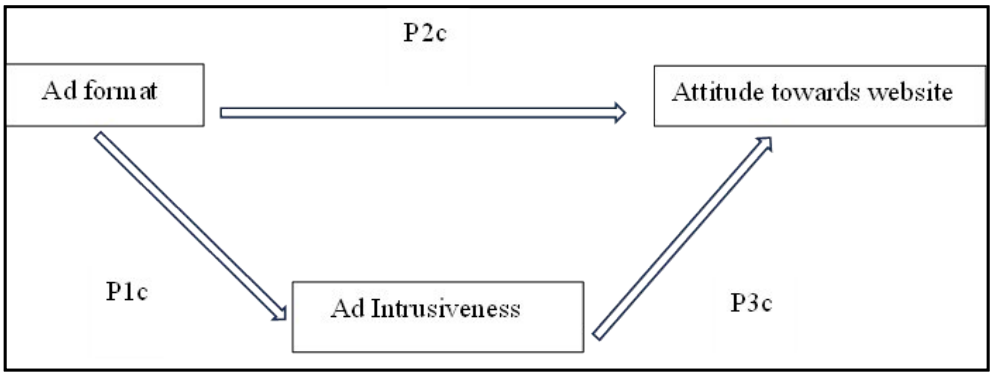

Figure 5. 7 Mediating Effect Pertaining To H6

H_6 postulates that native ads will lead to lower ad intrusiveness which in turn will cause more favourable attitude towards the website, as compared to banner ads.

Path coefficient P1c is -0.738 with a p-value 0.00, is significant, meaning Ad format (native vs. banner) significantly affects the perceived ad intrusiveness, with native ads being less intrusive than banner ads.

Path coefficient P3c is 0.109 with a p-value 0.4, is insignificant, indicating ad intrusiveness does not affect attitude towards website.

Path coefficient P2c is 0.191 with p-value 0.215 is insignificant meaning Ad format has no significant direct effect on attitude towards website after accounting for the mediator (ad intrusiveness).

Indirect effect i.e. P1c*P3c is -0.08 and p-value 0.429 is also insignificant demonstrating that differing levels of ad intrusiveness (Due to ad format) do not affect formation of attitude towards website.

5.5.4 Correlation Between Attitude And Intention

H_5 investigates the correlation of attitude to ad on intention to click on ad

H_5 posits the positive association between attitude towards ad and intention to click on ad.

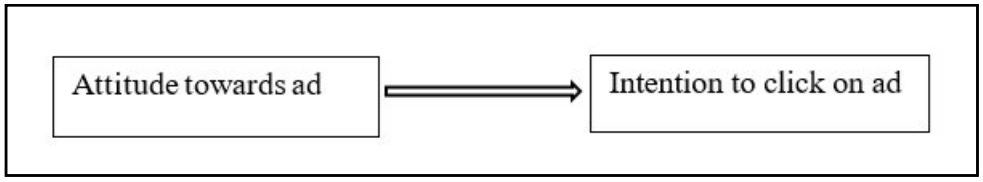

Figure 5. 8 Correlation Referring To H5

The path coefficient is 0.798 with a p-value 0.00, indicating support for H_5

This ratifies our proposition that attitude towards the ad has a significant positive on intention to click on ad.

H_7 investigates the direct effect of attitude to website with intention to revisit website

H_7 hypothesises the positive association between attitude towards website and intention to revisit website.

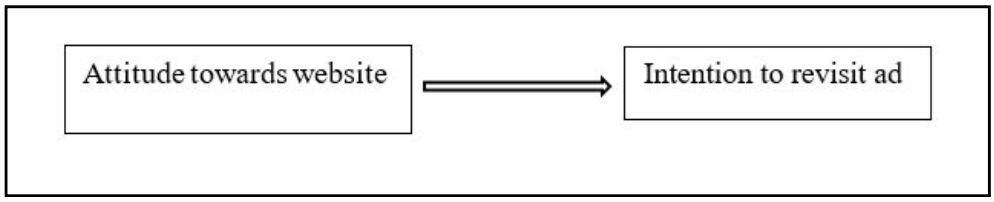

Figure 5. 9 Correlation Pertaining To H7

The path coefficient is 0.226 with p-value 0.00, indicating support for H7

This validates our alternative hypothesis that attitude towards the website has significant positive effects on intention to revisit website.

5.5.5 Mediating effect of irritation

H_8 investigates the mediating effect of irritation from ad intrusiveness to attitude towards ad.

H_8 postulates that when ad intrusiveness decreases, irritation also decreases and this, in turn, increases the attitude towards ad.

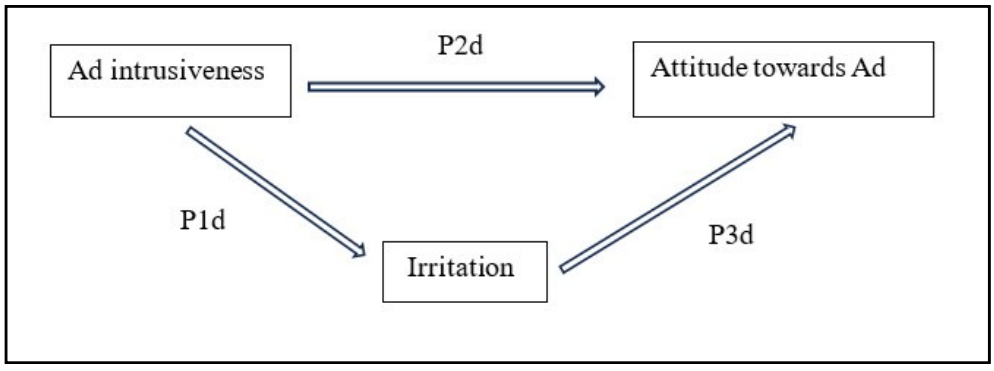

Figure 5. 10 Mediating Effect Pertaining To H8

Path coefficient P1d is 0.659 with p-value 0.00, is significant meaning decremental ad intrusiveness significantly decreases irritation.

Path coefficient P2d is -0.008 with p-value 0.857, is insignificant indicating that decremental ad intrusiveness does not strengthen attitude towards ad.

Path coefficient P3d is -0.288 with p-value 0.00 is significant indicating decremental irritation positively affects the attitude towards ad.

Indirect effect i.e. P1d*P3d is -0.19 and p-value 0.00 is significant confirming the mediating role of irritation between ad intrusiveness and attitude towards ad. Specifically as ad intrusiveness decreases, it mitigates irritation which results in stronger attitude towards ad

H_9 investigates the mediating effect of irritation from ad intrusiveness to attitude towards website.

H_9 postulates that when ad intrusiveness decreases, irritation also decreases and this in turn increases the attitude towards website.

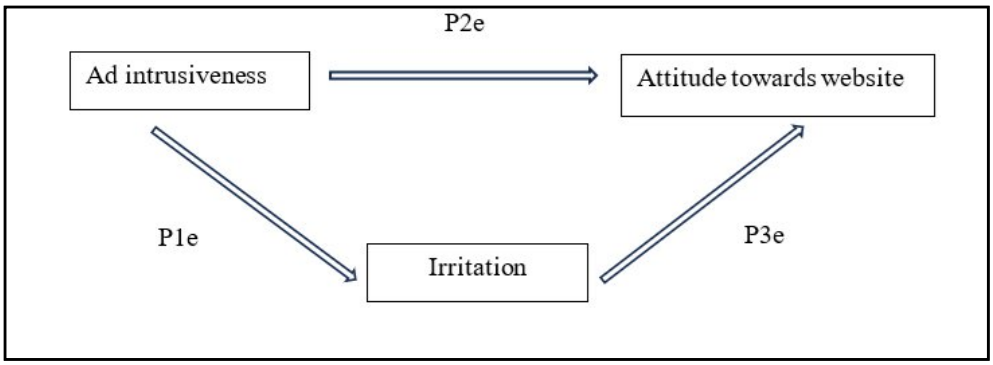

Figure 5. 11 Mediating Effect Pertaining To H9

Path coefficient P1e is 0.659 with p-value 0.00, is significant , meaning decremental ad intrusiveness reduces irritation.

Path coefficient P2e is 0.109 with p-value 0.4, is insignificant meaning decremental ad intrusiveness has no effect on attitude towards website.

Path coefficient P3e is -0.468 with p-value 0.001 is significant indicating reduction in irritation strengthens the attitude towards website.

Indirect effect i.e. P1e*P3e is -0.308 and p-value 0.002 is significant confirming the mediating role of irritation between ad intrusiveness to attitude towards website. Specifically, as ad intrusiveness decreases, it mitigates irritation which results in stronger attitude towards website

5.5.6 Moderating Effects Of Viewing Mode

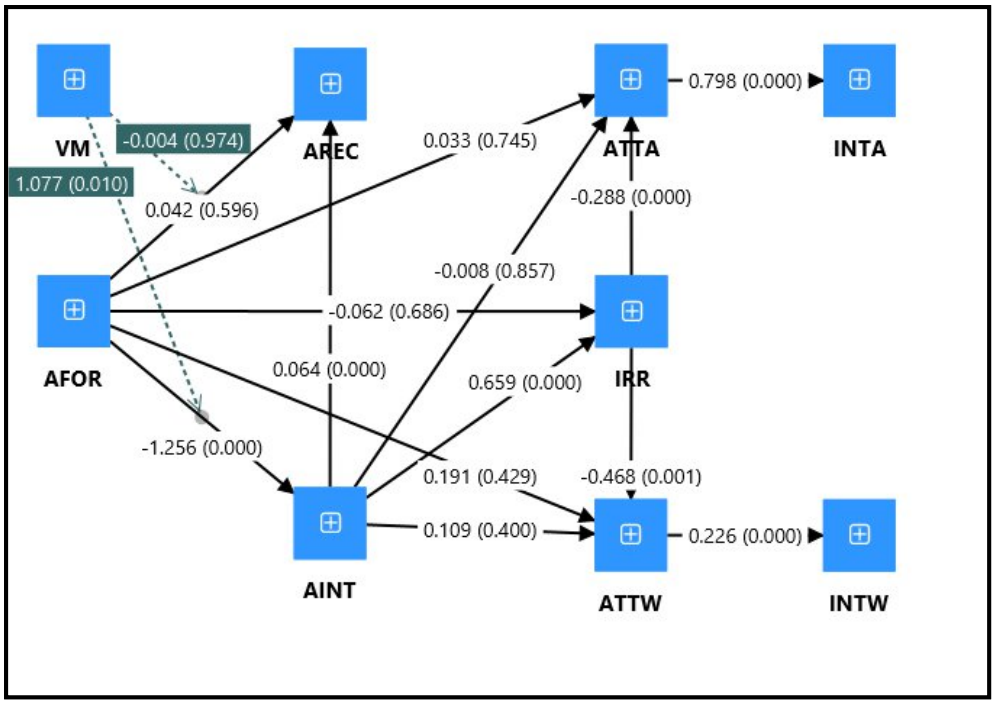

Figure 5. 12 Structural Model With Moderator (Viewing Mode)

H_{10} investigates the moderating effect of viewing mode on the relationship between ad format and ad intrusiveness.

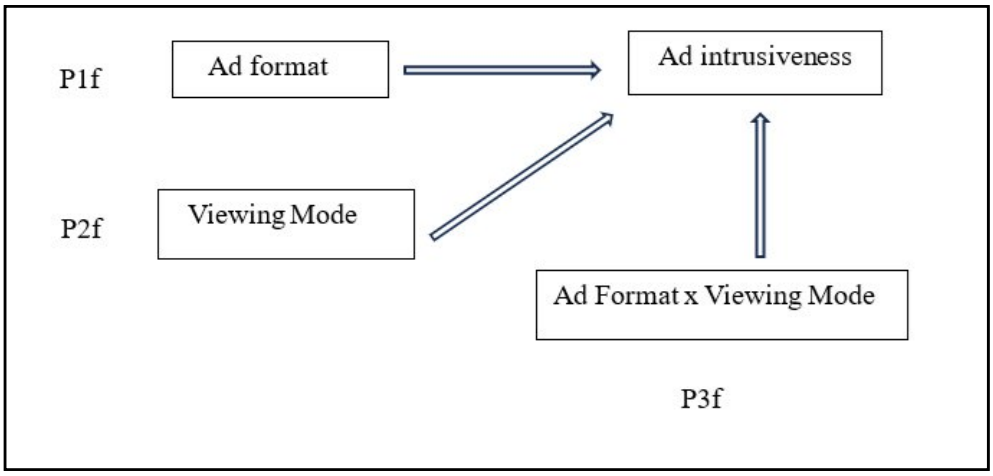

Figure 5. 13 Moderating Effect Pertaining To H10

H_{10} proposes that goal-orienteded browsing increases the negative effect in the relationship between ad format and ad intrusiveness.

Path coefficient P3f is 1.077 with p-value 0.01 is significant. A positive coefficient indicates that when we move from free browsing mode to goal-oriented browsing the (existing negative) effect of ad format on ad intrusiveness increases. This means that the ad intrusiveness caused by banner ads accentuates in comparison to ad intrusiveness caused by native ads.

H_{11} investigates the moderating effect of viewing mode on the relationship between ad format and ad recognition.

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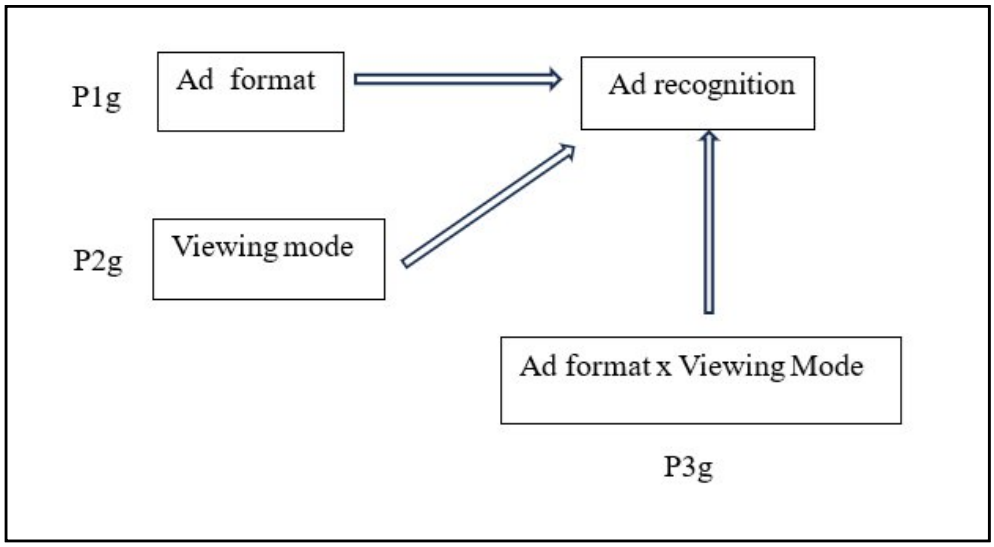

Figure 5. 14 Moderating Effect Pertaining To H11

H_{11} proposes that goal-orienteded browsing decreases the negative relationship between ad format and ad recognition.

The path coefficient P3g is -0.004 with p-value 0.974 is insignificant. Therefore, viewing mode has no moderating effect on the (existing insignificant) effect of ad format on ad recognition.

5.6 Results Summary And Final Model

Figure 5.15 presents the revised model formed by including only the significant paths.

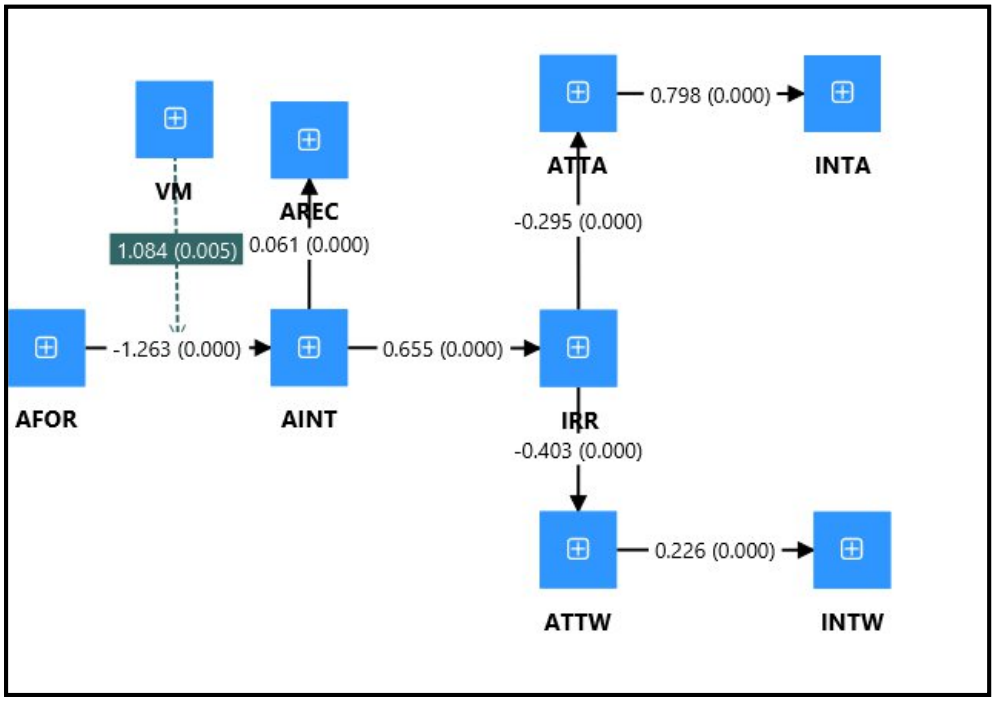

Figure 5. 15 Revised Model With Significant Paths At p < 0.05

Statistics from the structural model supported seven out of eleven hypotheses (Table 5.3). The most noteworthy finding pertained to the significance of ad intrusiveness in explaining the consequences of exposure to online ads. Also found significant was the moderating role of viewing mode on the relationship between ad format and intrusiveness. The following chapter details the above results in light of past research. The objective is to highlight support from published works and consider plausible reasons for deviations from the literature.

No.	Hypotheses	Result	Interpretation
H_1	Native ads will cause lower ad intrusiveness as compared to banner ads	Supported	Native ads are perceived as less intrusive than banner ads
H_2	Native ad formats lead to lower ad recognition as compared to banner ads	Not supported	There is no significant difference in ad recognition elicited by the two formats.
H_3	Mediating hypothesis: The impact of ad format on irritation is mediated by ad intrusiveness	Supported	Native ads (compared to banner ads) reduce ad intrusiveness, which in turn reduces irritation.
H_4	Mediating hypothesis: The impact of ad format on attitude towards ad is mediated by ad intrusiveness	Not supported	Differing levels of ad intrusiveness (due to ad format) do not affect attitude formation towards ad.
H_5	Correlational hypothesis: Attitude towards ad is positively related to intention to click on ad	Supported	Attitude towards the ad has a significant positive on intention to click on ad.
H_6	Mediating hypothesis: The impact of ad format on attitude towards website is mediated by ad intrusiveness	Not supported	Differing levels of ad intrusiveness (due to ad format) do not affect formation of attitude towards website.
H_7	Correlational hypothesis: Attitude towards website is positively related to intention to revisit website	Supported	That attitude towards the website has significant positive effects on intention to revisit website.
H_8	Mediating Hypothesis: The impact of ad intrusiveness on attitude towards ad will be mediated by irritation	Supported	As ad intrusiveness decreases, it mitigates irritation which results in stronger attitude towards ad

H_9	Mediating Hypothesis: The impact of ad intrusiveness on attitude towards website will be mediated by irritation	Supported	As ad intrusiveness decreases, it mitigates irritation which results in stronger attitude towards website
H_{10}	Moderating Hypothesis: Viewing mode will moderate the impact of ad format on ad intrusiveness	Supported	Shifting from free browsing mode to goal-oriented browsing accentuates ad intrusiveness caused by banner ads in comparison to ad intrusiveness caused by native ads.
H_{11}	Moderating Hypothesis: Viewing mode will moderate the impact of ad format on ad recognition	Not supported	Viewing mode has no moderating effect on the (insignificant) relationship between ad format and ad recognition

Table 5. 4 Hypotheses Results - Interpretation

CHAPTER 6 – DISCUSSION AND CONCLUSION

This chapter discusses the study's results against the backdrop of past literature, building upon the prevailing knowledge of native advertising. The study aims to enhance the existing understanding of mechanisms by which native ads function. Additionally, the implications of the results on theories (i.e., limited capacity attention theory, distinctiveness effect, psychological reactance theory) are also described. From a practical standpoint, this section attempts to decipher the relationship between online ad formats and outcomes of interest to advertisers and website owners. The mediating role of ad intrusiveness and affective outcome i.e. irritation, is also discussed. Finally, the implications of viewing mode/ browsing styles on efficacy are analysed.

6.1 Ad Intrusiveness Of Banner And Native Ad Formats

Ad intrusiveness was found to be lower for native ads compared to banner ads (H_1 supported). The findings are in agreement with prior studies that attribute intrusiveness to the dissimilar presentation features of the ad format. Though all types of ads cause interference with users' consumption of media (Wojdynski & Golan, 2016), native ads are considered to be the least intrusive as they merge with the media content (Wojdynski, 2016a). The similarity of the native ad with its surroundings orients only a mild visual response from the user, causing minimal disruption and uninterrupted browsing. Conversely, when the stimulus was a banner, its distinct presentational form contrasts with the surrounding content, compelling a response website from the user. This compulsion results in high ad intrusiveness. (Campbell & Mark, 2015; Matteo and Zotto, 2015)

6.2 Ad Recognition Of Native And Banner Ad Formats

While ad recognition was put forth to measure memory, no significant difference (H_2 unsupported) was found between ad recognition rates. This result is contradictory to part of the literature. Differences in ad recognition rates have been reported by various studies. Some of these studies have compared similar formats while others have contrasted two different ad formats. For instance, McCoy et al. (2017) focussed on the effects of ad repetition on ad recognition using inline ads. Chaney and colleagues (2018) used ad size (smaller ad stimuli were 50% of the large ad stimuli) as a point of departure to analyse ad memory differences. Pop-up ads yielded a higher ad recognition rate than banner ads, as the former obscured content and had to be dismissed to resume browsing. The significant difference in ad recognition could be due to the salience of the ad features under scrutiny. Repetition (and its lack of), obstruction (vs. clear access), and ad sizes present starkness in the stimuli. The present study did not contain ads possessing these 'salient variations', which could be the reason for the contrary findings.

Taking the enquiry forward, a model was tested with the inclusion of 'ad intrusiveness' as a mediating construct (Zhao et al., 2010). In the mediation analysis, ad intrusiveness's role was significant in explaining the difference in ad recognition caused by the two ad formats. However, the path coefficient was close to zero, indicating a negligible mediating effect. This finding aligns with the proposed explanation in the preceding paragraph wherein ads without 'salient variations' may not be eliciting differential memory recall.

6.3 Effects Of Unequal Ad Intrusiveness From Native And Banner Ads

The mediating role of ad intrusiveness was assessed in three relationships. While the independent variable in all three cases was the ad format (native

or banner), the dependent variables were irritation (H_3), attitude towards ad (H_4) and attitude towards website (H_6). The p-values affirmed the mediating role of ad intrusiveness between ad format and irritation (H_3 supported). However, no support was found for the mediating role of ad intrusiveness as expressed in H_4 (H_4 unsupported) and H_6 (H_6 Unsupported)

Irritation was found to be positively related to advertising intrusiveness. This finding is consistent with those of past studies, which indicated that advertising intrusiveness leads to irritation from online ads (Sharma et al., 2022), display ads such as skyscrapers,[1] rectangle ads[2] (Goldstein, 2014), pop-up ads (McCoy et al., 2008). If a person is disrupted in their browsing activity, it gives rise to irritation. This study showed that the higher the ad intrusiveness, the stronger the feelings of irritation.

Hypothesis 4 stated that ad intrusiveness would mediate between ad format and formation of ad attitudes. However, this result was not supported by the findings. In the current study, the behavioural measure is represented by intention to click on ad, which in turn is dependent on the attitude towards the ad. Since ad intrusiveness was found to be significant, it is clear that reactance exists. However, reactance does not affect the behavioural measure adopted in this study. A study by van der Goot et al. (2018) and Youn and Kim (2019a) contends that ad avoidance is of 2 types – behavioural and cognitive. Behavioural avoidance occurs when efforts are made to avoid the ads, such as dismissing the ad, installing ad blockers and/ or changing ad preferences. A cognitive avoidance response takes place when the ad is simply ignored. It is strongly plausible that the reactance is not manifesting in adverse behaviour (attitude) but in the form

[1] Skyscrapers are tall, narrow and vertical banner ads on the side of a webpage. They typically occupy the complete side of the webpage.
[2] Rectangles are large banner ads.

of cognitive avoidance. Kelly et al. (2020) describe this continuum of approach avoidance behaviour as having two opposite ends known as ‘active/passive engagement’ and ‘active/passive avoidance’. Therefore, according to Kelly’s (2020) definition, ignoring ads amounts to passive avoidance.

The above explanation also supports the absence of ad format’s direct effect on attitude towards ad.

The reasons for adopting a passive avoidance response can be attributed to a user’s personal and socio-economic utility beliefs, shaping their online advertising attitudes. Though outside the purview of this hypothesis, Indian users hold several beliefs that impact their ad attitudes positively. One such finding about Indian users’ belief that online ads aided in boosting the economy’s status (Gupta et al., 2024).

The mediating effect of ad intrusiveness on attitudes towards the website was expressed in H_6. Data analysis indicated that though ad intrusiveness was perceived, it didn’t affect attitude towards the website. This result is not as per the literature. McCoy and colleagues’ study (2017) on repeated ad exposure reported a negative significant effect of ad intrusiveness on website attitudes. Goodrich et al. (2015) confirmed that longer pre-roll video ads elicited strong intrusiveness which lead to reduced website re-visit intentions. Both studies used ads tactics that delayed intended media consumption or obscured website content. The ads used in this study were only displayed once and did not cover any part of the website.

The results of this study resonate with Youn and Kim’s (2019b) explanation of users' ability to differentiate between receiving ads on a website and using the website. Users sense a trade-off between viewing

ads, (as long as they can be passively avoided) and free access to website content.

Therefore, with reference to psychological reactance theory, attitude towards website is unlikely to be affected by ad intrusiveness when the ad can be cognitively avoided/ passively avoided.

6.4 Explanatory Role Of Irritation

The effect of ad format on attitude towards ad and attitude towards website was serially mediated by irritation via ad intrusiveness. While ad intrusiveness did not mediate between ad format and attitudes, it had a direct relationship with irritation. Subsequently, irritation had a negative effect on attitude towards ad and attitude towards website.

Literature suggests that irritation arises due to intrusiveness which in turn contributes to its (dis) likeability. The results of this research supported this notion. For example, Youn and Kim (2019a) reported participants' favourable disposition towards in-feed ads due to their assimilative appearance. The ad format's subtle presence caused significantly lower intrusiveness and lower irritation, leading to its popularity with respondents.

Kononova et al. (2016) found serial mediation of three variables in their enquiry on multi-media tasking (reading an online article and checking Facebook). Between multitasking as an independent variable and ad avoidance as a dependent variable, ad scepticism to intrusiveness to irritation were found to be serially mediating. Though the study explored multi-screening's effect on ad avoidance, the findings complement this study's results of serial mediation.

McCoy et al. (2012) found that ad intrusiveness contributed significantly to irritation and poor attitudes towards ads because the presence of ads

interfered with users' browsing requiring increased cognitive effort to concentrate on the website content. The cumulative effect of interruptions and counter-efforts impacted the user's intention to return to the website or even recommend it to others.

Thota et al. (2012) included only irritation as a mediating variable in their framework. In the absence of ad intrusiveness, irritation had shown a significant explanatory effect in explaining animated banners' negative effects on attitude towards host website.

Although irritation's mediating role between ad intrusiveness and attitude formation was not hypothesised, the finding is theoretically aligned with published knowledge.

6.5 Correlational Relationship Between Attitudes And Intentions

The two hypotheses H_5 and H_7 refer to the relationship between attitudinal constructs and behavioural intentions. Firstly, attitude towards ad was a strong predictor of intention to click on ad. Secondly, attitude towards the website was also a significant predictor of intention to revisit website. Articles which have deployed the theory of reasoned action to support their attitudinal–intention hypotheses, are discussed in the following paragraphs.

McCoy et al. (2008) examined in-line ads which, where in the ad's obscurity and dismiss ability were manipulated. The authors reported that obscurity and control were significant predictors of ad intrusiveness, which caused irritation in users. Higher irritation decreased attitudes toward the website. Subsequently, these attitudes were significant in explaining behavioural intentions to return to the site.

In the context of online banner ads, Jones and Idemudia (2015) ratified the positive and significant effect of attitude toward banner ads on intention.

Central to Wang and colleagues' (2020) research were mobile ads wherein authors reported a positive attitude towards mobile advertising. This was a significant influencer of consumers' intention to use mobile advertising.

Researchers Im et al. (2021) explored the effects of a webpage's visual complexity on advertisements and recorded the attitudes toward the webpage, products, advertisements, and intention to click on ad. The strongest correlation was between the attitude towards the ad and the intention to click on it.

In their conceptual paper on in-app advertising, Maddodi and Upadhyaya (2023) cite several instances where attitudes towards in-app ads were significant mediators between independent variables and intention to click on ad, intention to re-visit app, and intention to shop on the app.

6.6 Moderating Role Of Viewing Mode

To assess the moderating role of viewing mode, the model was re-run with the inclusion of viewing mode (Becker et al., 2022). It was entered as a dummy variable where in free browsing was coded '0' and goal-oriented browsing was coded '1'. Viewing mode was found to be a significant moderator of the relationship from ad format to ad intrusiveness, as postulated in H_{10}.

The viewing mode adopted by the user i.e. goal-oriented browsing and free browsing, altered the ad format's effect size on the ad intrusiveness caused. It was hypothesised that in goal-oriented mode, the user's attentional resources were dedicated to completing the task at hand, leaving fewer resources to process peripheral stimuli. It was also found that banner ad formats caused more intrusiveness than native ad formats, essentially because the banner was visually distinct from its surrounding content, unlike the native format, which assimilates with the environment. When we assessed the role of viewing mode on the ad intrusiveness caused

by the two ad formats, it was found that the ad intrusiveness caused by banner ads accentuated in goal-directed browsing vis a vis in free browsing. The same pattern was observed for native ads as well. Therefore, while banner ads are more intrusive than native ads, the intrusiveness caused by both formats increases when the user is in goal-directed mode. The presence of a pre-determined task diminishes the cognitive resources available for attending to ads, and in such a scenario, exposure to either a banner or a native ad coerces the primary cognitive resources, eliciting heightened reactance in the user. Another way of understanding this is when users have a primary task at hand, ads that are designed to attract user's attention pull away resources from those that are working towards achieving the goal. The additional effort required to attend to the interruptions increased the ad intrusiveness.

H_{11} examined the moderating role of viewing mode on the relationship between ad format and ad recognition. Despite the absence of a direct effect between ad format and ad recognition, the query was extended to ascertain viewing mode's moderation of the path from ad format to ad recognition. Nonetheless ad-viewing did not moderate this relationship. Therefore, whether one is in goal browsing mode or not, it doesn't have any effect on the recognition rate of banner and native ads.

The ensuing chapter covers the managerial and theoretical implications of comparative ad efficacy. Limitations of the study and key research areas for future investigations are also suggested.

CHAPTER 7 – IMPLICATIONS

The study began by introducing the focal online ad format – native ad format. The user-friendly features of this format compelled us to examine it more closely and derive its efficacy. For an unbiased assessment, the performance of the native ad and the banner ad format was compared using similar parameters.

The essence of our study lies in firstly evaluating the advertising effectiveness of two ad formats basis their presentational features and secondly, in understanding the nature of stimulus-driven attention, user-driven attention and reactance in user's browsing activity. We measured effectiveness by ad memory, emotion elicited and behavioural intentions after exposing subjects to the two formats. Although ad format was the point of departure of our study, we also examined the extent of moderation by the viewing mode on ad memory and ad intrusiveness. We hypothesised the direct effect of format on ad memory and examined the emotional and behavioural outcomes through the ad intrusiveness lens.

7.1 Theoretical Implications

The findings of this study offer important insights into outcomes of intrusive ad exposure. This has significant implications for the understanding of visual distinctiveness. Given the focus of this scientific enquiry, a format's presentational features and findings related to the delineation of mental processes when a native or banner ad is encountered. In evaluating the assimilative native ad format, this research elucidated the consequences of exposure to non-distinct stimuli. The study, through the use of two contrasting formats, confirmed that the visual execution of an ad format was responsible for heightening disruption. The native ads caused lower levels of disruption than banner ads. This asserts that not only are native ads visually less demanding but also that indistinct presentational features of an online ad cause fewer cognitive interruptions

while browsing. The banner format has distinct visual execution, which leads to frequent disruptions and stronger psychological reactance.

Literature has reported that ad intrusiveness elicits negative emotions like irritation, and the present study corroborates this finding. The preceding paragraph highlighted the divergent levels of intrusiveness caused by the two ad formats. Further to this, irritation varied with ad intrusiveness. So even though exposure to the ad formats did not directly cause irritation, it led to reactance, which in turn evoked irritation.

No direct or indirect relationship between exposure to native or banner ads and ad recognition was found. Additionally, mediating effect of ad intrusiveness between ad format and ad recognition was also negligible. In other words, when ads possess certain salient presentational features (like obtrusion, repition, etc.) only then do they interrupts users' viewing goals which subsequently leads to higher ad recognition. This is a valuable addition for defining boundary conditions in the relationship between ad exposure and incidental memory where in unobtrusize, unanimated, single exposure ads do not activate the cognitive abilities that facilitate ad recognition.

The third input resulting from this study ascribes to the construct of irritation. Although irritation arose due to ad intrusiveness, the latter did not influence either of the attitudinal constructs i.e. attitude towards ad and attitude towards website. However, by including irritation in the path of causality, it was found that the effect of ad formats on attitudes was serially mediated by ad intrusiveness and irritation. To put it more precisely, the causal path from ad intrusiveness to the attitudinal measures was insignificant but the inclusion of irritation as a second mediator played a vital explanatory role in determining attitudes. In entirety, the ad intrusiveness caused by two ad formats causes varying levels of irritation, which in turn manipulates the formation of attitude towards ad and attitude towards website. Therefore, affective responses are explained by ad

intrusiveness, and the former causes negative attitudes towards the ad and website, thus reducing users' intention to engage with them.

The novelty of the fourth implication lies in the addition of viewing mode, or the browsing style, that internet users adopt. Most existing studies on online ad effectiveness have assumed either goal-oriented or free browsing viewing while reporting their findings. In the rare case where the studies have incorporated both viewing modes – they may still be presenting an incomplete picture of ad effectiveness by including only one component of effectiveness i.e. emotional or, cognitive or behavioural. This research examined the role of user-goal -driven attention in a comprehensive manner by including both goal-oriented and free browsing modes. The forms of browsing indicate the presence of a predetermined task and resultant spare capacity. By including both viewing modes, findings hilighted the nature of the relationship between user-driven attention and ad intrusiveness. Additionally, the study was one of the first to examine the moderating role of user-driven attention (in the form of viewing mode) between stimulus-driven attention (ad format) and ad & website outcomes.

This investigation has brought out an integrated model combining the explanatory role of attention, memory, reactance, emotions and behavioural intentions, in parsing the outcomes of online ads. Lastly, it is one of the first to have recorded three classes of responses i.e. affective, cognitive and behavioural, resulting in an exhaustive evaluation of online ad formats. The following section discusses the implications for practitioners and managers.

7.2 Implications for Practitioners and Regulators

Advertisers are often faced with the challenging task of allocating their budgets to media outlets. Knowing that a sizeable portion of the customer base accesses the internet from their personal mobile devices, advertisers

are keen to reach these users in the least intrusive way possible. One of the main differentiators of online ads is the format or the presentational form of the marketing message. In reality, without knowing the efficacy of ad formats, the task of finalising a media mix and a media plan is challenging.

The current findings are a step towards easing this task for advertisers. By contrasting banner and native ad formats' disruptive properties and comparing performance parameters such as ad recognition, irritation and intention to click on an ad, advertisers will learn the pros and cons of both formats. Depending on the communication objective, brand managers can make an informed decision about the choice of format and consequently justify returns on the advertising spends.

The banner ad format is one of the earliest forms of internet advertising that has maintained its visual appearance, though it is increasingly plagued by banner blindness. Newer and more sophisticated formats are evolving, and they promise to renew ad revenues for website owners. The number of website visitors dictates the ad rates that a website commands from advertisers. Therefore, website owners are focused on not only adding fresh visitors but also retaining existing ones. The results of this enquiry provide a fair assessment of format efficacy in terms of the intention of a user to return to the website.

Website owners/ publishers invest significantly in designing their websites, putting emphasis on user experience. Because mobile device's screen size is generally restricting, the visual appearance of an ad competes more intensely for user attention on the mobile device. This creates a critical situation for website owners and advertisers. As more users access the internet from their mobile devices, the browsing experience on the mobile platform needs to be smooth. Considering the heavy dependence of website owners on revenue from ad space, website owners need to be selective about the choice of ad formats. Utilities' websites (e.g., gas supply or power supply) are often accessed for the sole purpose of

checking usage, updating account details and making bill payments, inducing the user to browse in a goal-oriented manner. For such websites, it will be beneficial to employ non-intrusive formats for advertising so that users face minimal interruption. If an intrusive format would be used in such a situation, it could provoke significant adverse reactions from the user with damaging consequences for the website owners. In contrast, for websites serving entertaining content, the website owners can deploy relatively more intrusive formats to convey brand messages. This would evoke moderate reactance as leisurely visitors have comparatively more cognitive capacity to spare to peripheral stimuli.

The regulator's main interest lies in providing a transparent and fair ad experience to the user. The primary issue with native ads has been their innate capability to deceive users. Policymakers like the Federal Trade Commission, (FTC – A United States government body for protection of consumer rights) and Interactive Advertising Bureau (IAB) regularly release disclosure guidelines to apprise users of the persuasive and commercial nature of the native ad. This study sheds light on user reactions to two ad formats; banner ads and native ads. The native ad format was found to deliver a seamless user experience vis a vis. the banner ad format.

By facilitating a disruption and deception free ad experience, the regulators would truly be prioritising the users' interests. While regulators are already standardizing ad disclosures, they can work towards increasing awareness and highlighting benefits of non intrusive formats. In the long run, users may develop the ability to identify covert ad formats while appreciating their non-disruptive presence. Another approach can be mandating websites to allow self report (by users) of suspected ads, for instance content which may be concealing its commercial nature.

At the global level, the "Coalition for better ads" works to "leverage consumer insights and cross-industry expertise to develop and implement new global standards for online advertising that address consumer

expectations" (Coalition for Better Ads, 2017). They believe that self-regulation (by advertisers) can curtail the intrusiveness of online advertising formats, as a result of which users will not feel the need to install ad blockers. Indeed, this research offers support in terms of identifying format-specific features (such as obtrusiveness, animation) that are responsible for ad intrusiveness.

Keeping in mind the potential ramifications of ad intrusiveness, this study provides vital clues in designing an apt online format for advertisers, website owners and mobile device users.

7.3 Limitations and Future Research Areas

Participants in the current research were from urban areas and mature users of mobile internet services. Even so, the rural areas are not far behind in terms of number of users. The rural populace is more accepting of internet content and less discerning towards ads. These users have not been included in the study, and incorporating them would give rich insights to marketers. Additionally, participants were recruited by way of convenience sampling, though they were allocated randomly to the treatment groups. Researchers can invest in random sampling which will augur well for the results' generalisability.

Reliability can be enhanced by closing the gap between intentions reported and actual behaviour performed. Experimental studies recording browsing and attention to ads by means of eye trackers and neuro-imaging tools can add to the research contributions.

Second, to improve control over the experimental ad, all the other stories and graphics were kept stable - lacking any motion or lag. On an actual webpage, this rarely happens. Also, the occurrence of several ads in one screen is very common. Therefore, it will be helpful if future studies

explore whether animation of the image or text of other webpage elements, auditory cues and haptic feedback affect the performance of the ad formats.

Third, only one of the two viewing conditions were applied in the present study. However, in real life, browsing does not happen in silos. There can be several windows and tabs opened simultaneously, so the user may be shuffling between both browsing styles. In the context of a mobile device, more conditions (e.g., place of access, battery levels and internet connectivity) may alter the cognitive load of the user. Since these conditions may contribute to the explanation of the research phenomenon, it will be worthwhile including them in upcoming research plans.

Additionally, the consequences of ad intrusiveness can be parsed further and measured on the 'active/passive engagement and active/passive avoidance' continuum (Kelly et al., 2020). Knowledge of this discernment will illuminate the precise nature of inattention to various ad types.

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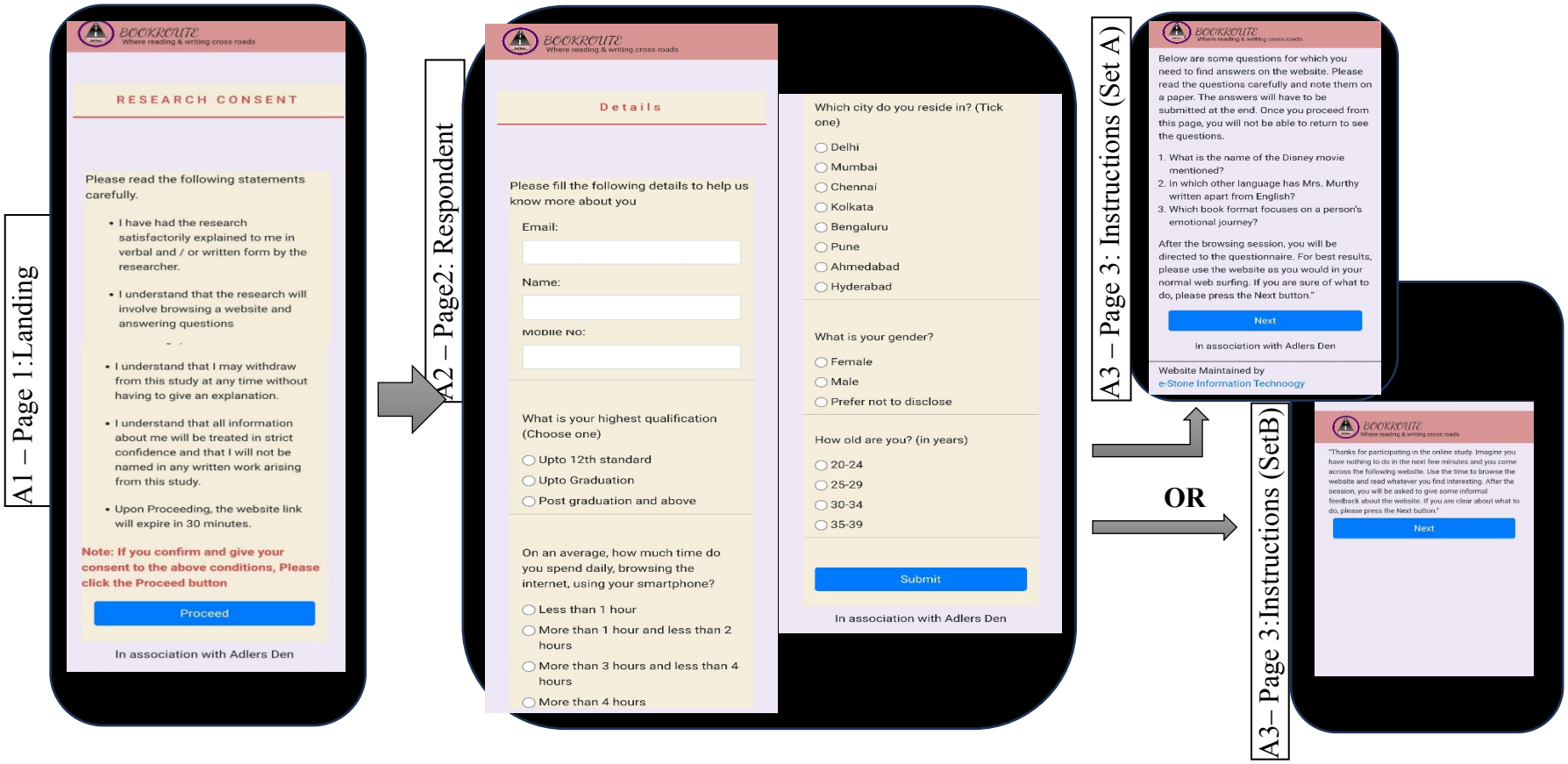
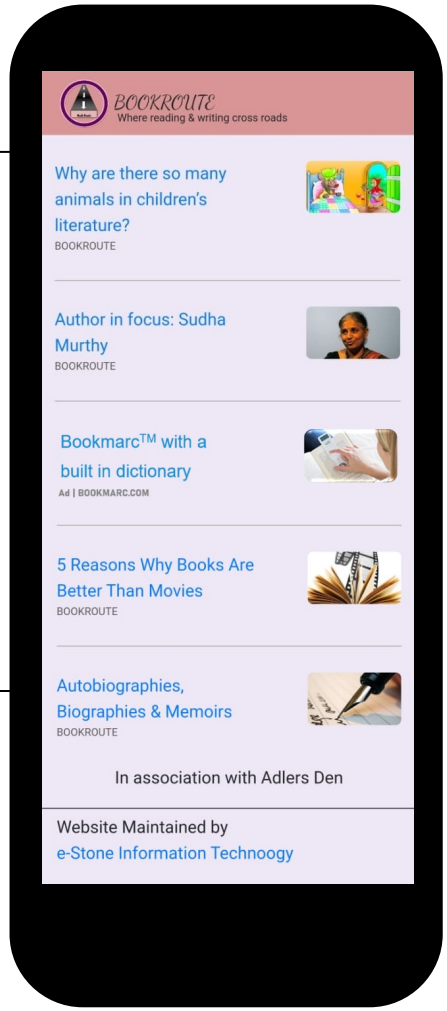
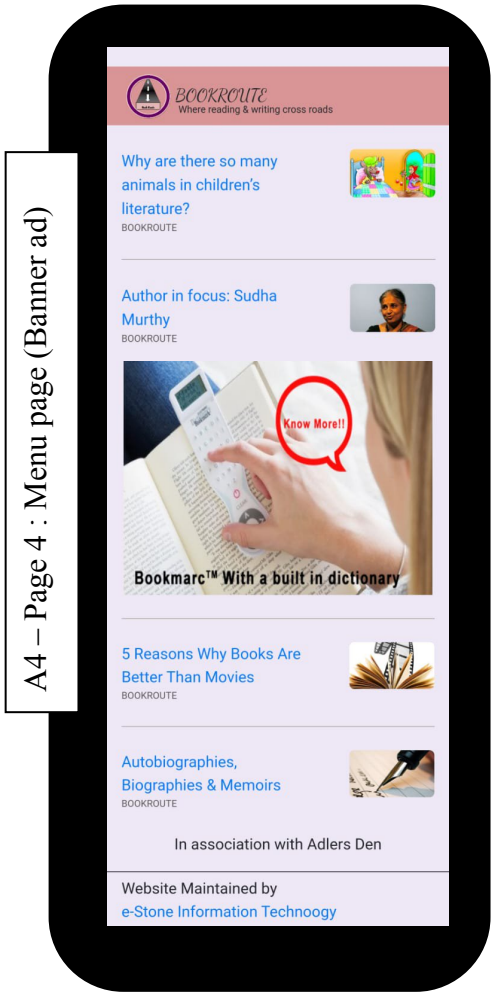
APPENDIX A

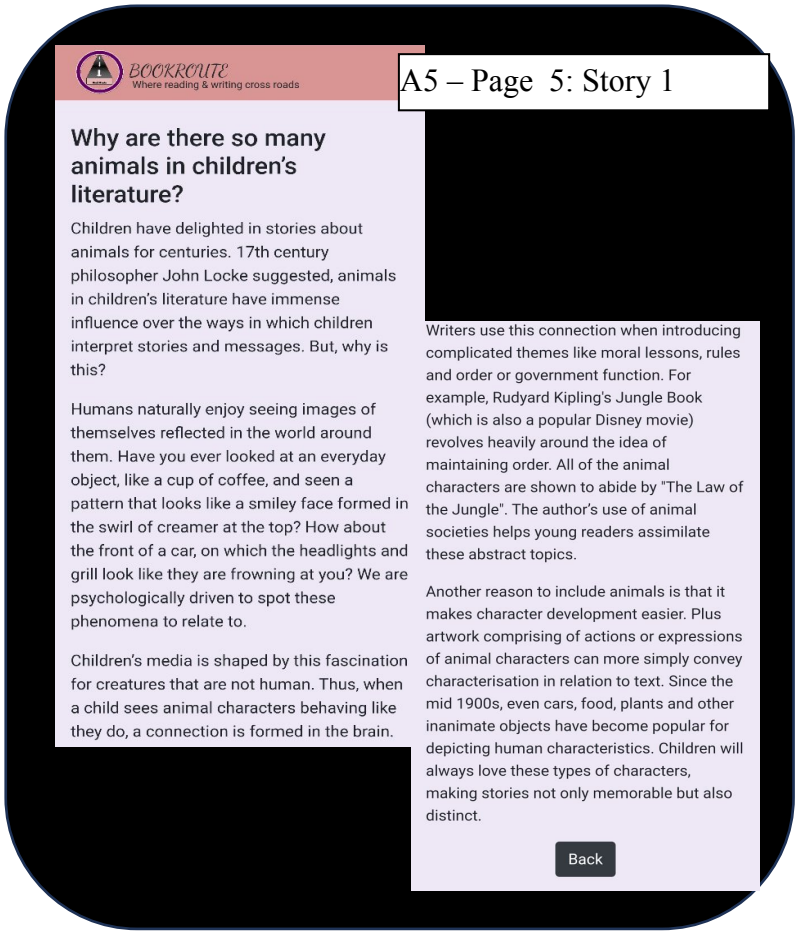

A1 – Page 1:Landing
BOOKROUTE
Where reading & writing cross roads
RESEARCH CONSENT
Please read the following statements carefully.
• I have had the research satisfactorily explained to me in verbal and / or written form by the researcher.
• I understand that the research will involve browsing a website and answering questions
• I understand that I may withdraw from this study at any time without having to give an explanation.
• I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study.
• Upon Proceeding, the website link will expire in 30 minutes.
Note: If you confirm and give your consent to the above conditions, Please click the Proceed button
Proceed
In association with Adlers Den
A2 – Page2: Respondent
Details
Please fill the following details to help us know more about you
Email:
Name:
Mobile No:
What is your highest qualification (Choose one)
Upto 12th standard
Upto Graduation
Post graduation and above
On an average, how much time do you spend daily, browsing the internet, using your smartphone?
Less than 1 hour
More than 1 hour and less than 2 hours
More than 3 hours and less than 4 hours
More than 4 hours
Which city do you reside in? (Tick one)
Delhi
Mumbai
Chennai
Kolkata
Bengaluru
Pune
Ahmedabad
Hyderabad
What is your gender?
Female
Male
Prefer not to disclose
How old are you? (in years)
20-24
25-29
30-34
35-39
Submit
In association with Adlers Den
A3 – Page 3: Instructions (Set A)
Below are some questions for which you need to find answers on the website. Please read the questions carefully and note them on a paper. The answers will have to be submitted at the end. Once you proceed from this page, you will not be able to return to see the questions.
1. What is the name of the Disney movie mentioned?
2. In which other language has Mrs. Murthy written apart from English?
3. Which book format focuses on a person's emotional journey?
After the browsing session, you will be directed to the questionnaire. For best results, please use the website as you would in your normal web surfing. If you are sure of what to do, please press the Next button."
Next
In association with Adlers Den
Website Maintained by
e-Stone Information Technoogy
OR
A3– Page 3:Instructions (SetB)
"Thanks for participating in the online study. Imagine you have nothing to do in the next few minutes and you come across the following website. Use the time to browse the website and read whatever you find interesting. After the session, you will be asked to give some informal feedback about the website. If you are clear about what to do, please press the Next button."
Next

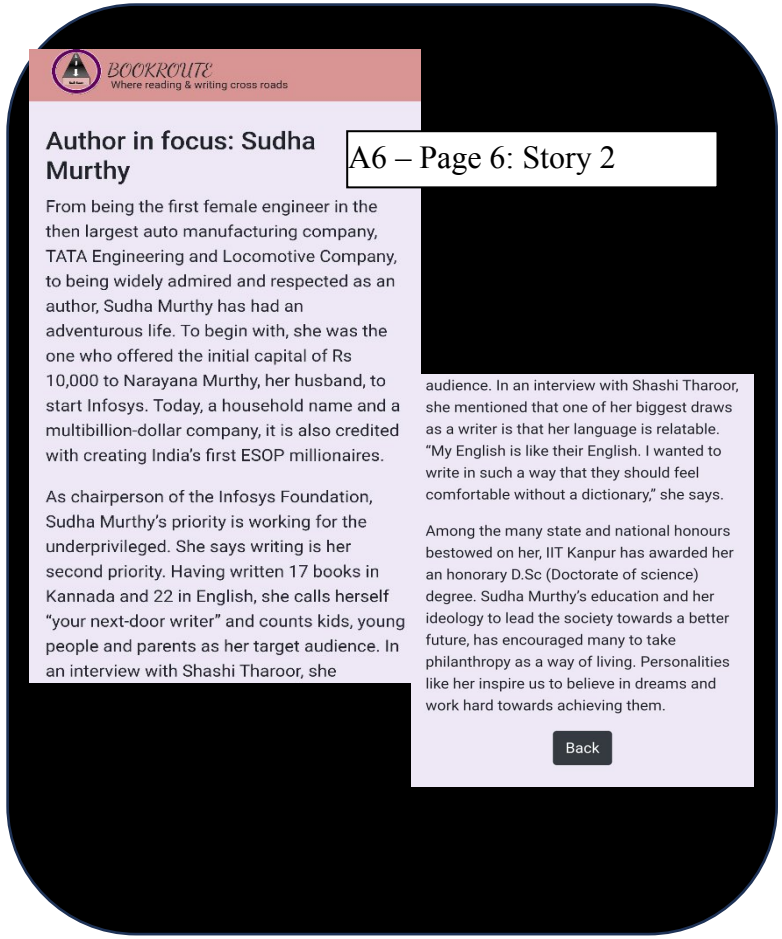
A4 – Page 4 : Menu page (Native ad)

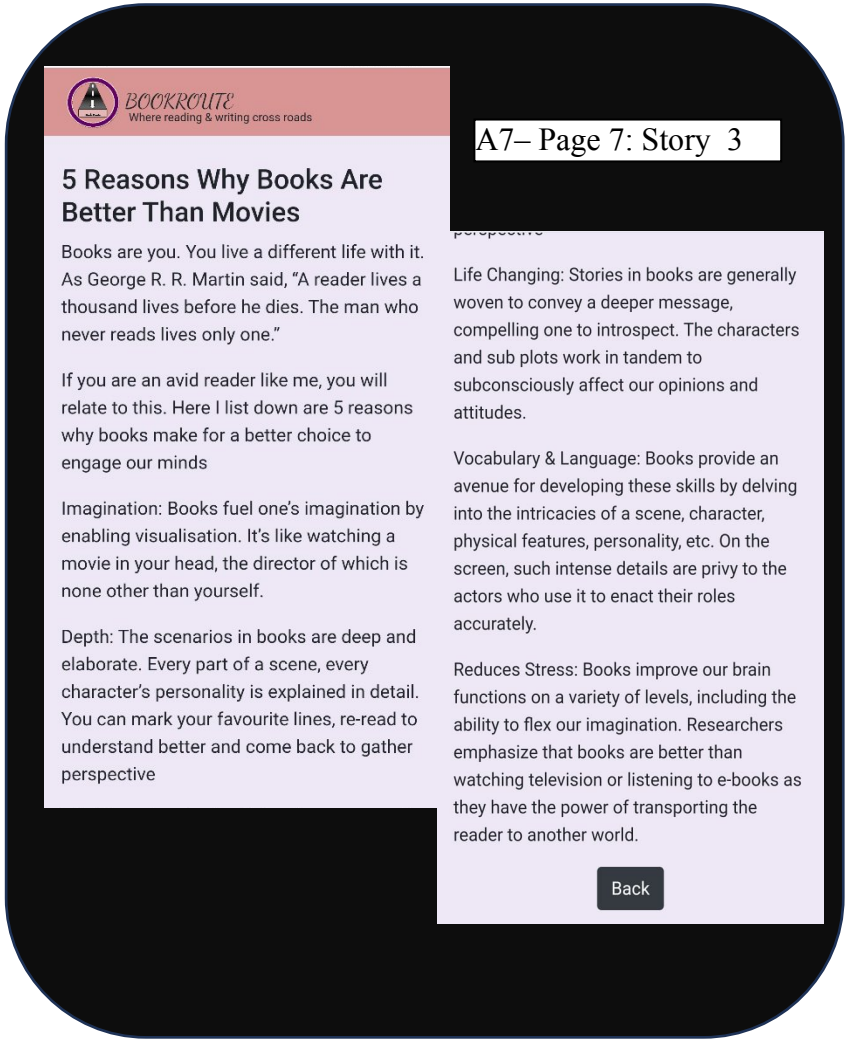


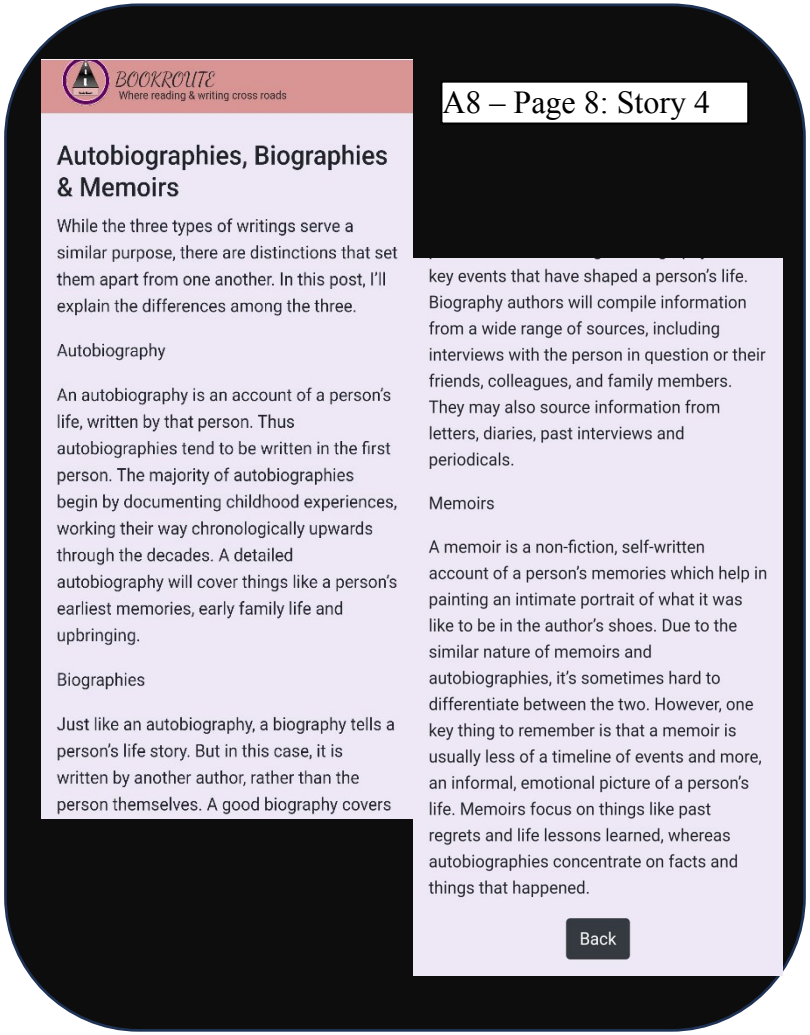
A4 – Page 4 : Menu page (Banner ad)




BOOKROUTE
Where reading & writing cross roads
A5 – Page 5: Story 1
Why are there so many animals in children's literature?
Children have delighted in stories about animals for centuries. 17th century philosopher John Locke suggested, animals in children's literature have immense influence over the ways in which children interpret stories and messages. But, why is this?
Humans naturally enjoy seeing images of themselves reflected in the world around them. Have you ever looked at an everyday object, like a cup of coffee, and seen a pattern that looks like a smiley face formed in the swirl of creamer at the top? How about the front of a car, on which the headlights and grill look like they are frowning at you? We are psychologically driven to spot these phenomena to relate to.
Children's media is shaped by this fascination for creatures that are not human. Thus, when a child sees animal characters behaving like they do, a connection is formed in the brain.
Writers use this connection when introducing complicated themes like moral lessons, rules and order or government function. For example, Rudyard Kipling's Jungle Book (which is also a popular Disney movie) revolves heavily around the idea of maintaining order. All of the animal characters are shown to abide by "The Law of the Jungle". The author's use of animal societies helps young readers assimilate these abstract topics.
Another reason to include animals is that it makes character development easier. Plus artwork comprising of actions or expressions of animal characters can more simply convey characterisation in relation to text. Since the mid 1900s, even cars, food, plants and other inanimate objects have become popular for depicting human characteristics. Children will always love these types of characters, making stories not only memorable but also distinct.
Back


BOOKROUTE
Where reading & writing cross roads
A6 – Page 6: Story 2
Author in focus: Sudha Murthy
From being the first female engineer in the then largest auto manufacturing company, TATA Engineering and Locomotive Company, to being widely admired and respected as an author, Sudha Murthy has had an adventurous life. To begin with, she was the one who offered the initial capital of Rs 10,000 to Narayana Murthy, her husband, to start Infosys. Today, a household name and a multibillion-dollar company, it is also credited with creating India's first ESOP millionaires.
As chairperson of the Infosys Foundation, Sudha Murthy's priority is working for the underprivileged. She says writing is her second priority. Having written 17 books in Kannada and 22 in English, she calls herself "your next-door writer" and counts kids, young people and parents as her target audience. In an interview with Shashi Tharoor, she
audience. In an interview with Shashi Tharoor, she mentioned that one of her biggest draws as a writer is that her language is relatable. "My English is like their English. I wanted to write in such a way that they should feel comfortable without a dictionary," she says.
Among the many state and national honours bestowed on her, IIT Kanpur has awarded her an honorary D.Sc (Doctorate of science) degree. Sudha Murthy's education and her ideology to lead the society towards a better future, has encouraged many to take philanthropy as a way of living. Personalities like her inspire us to believe in dreams and work hard towards achieving them.
Back


BOOKROUTE
Where reading & writing cross roads
5 Reasons Why Books Are Better Than Movies
Books are you. You live a different life with it. As George R. R. Martin said, "A reader lives a thousand lives before he dies. The man who never reads lives only one."
If you are an avid reader like me, you will relate to this. Here I list down are 5 reasons why books make for a better choice to engage our minds
Imagination: Books fuel one's imagination by enabling visualisation. It's like watching a movie in your head, the director of which is none other than yourself.
Depth: The scenarios in books are deep and elaborate. Every part of a scene, every character's personality is explained in detail. You can mark your favourite lines, re-read to understand better and come back to gather perspective
A7– Page 7: Story 3
Life Changing: Stories in books are generally woven to convey a deeper message, compelling one to introspect. The characters and sub plots work in tandem to subconsciously affect our opinions and attitudes.
Vocabulary & Language: Books provide an avenue for developing these skills by delving into the intricacies of a scene, character, physical features, personality, etc. On the screen, such intense details are privy to the actors who use it to enact their roles accurately.
Reduces Stress: Books improve our brain functions on a variety of levels, including the ability to flex our imagination. Researchers emphasize that books are better than watching television or listening to e-books as they have the power of transporting the reader to another world.
Back


BOOKROUTE
Where reading & writing cross roads
Autobiographies, Biographies & Memoirs
While the three types of writings serve a similar purpose, there are distinctions that set them apart from one another. In this post, I'll explain the differences among the three.
Autobiography
An autobiography is an account of a person's life, written by that person. Thus autobiographies tend to be written in the first person. The majority of autobiographies begin by documenting childhood experiences, working their way chronologically upwards through the decades. A detailed autobiography will cover things like a person's earliest memories, early family life and upbringing.
Biographies
Just like an autobiography, a biography tells a person's life story. But in this case, it is written by another author, rather than the person themselves. A good biography covers
A8 – Page 8: Story 4
key events that have shaped a person's life. Biography authors will compile information from a wide range of sources, including interviews with the person in question or their friends, colleagues, and family members. They may also source information from letters, diaries, past interviews and periodicals.
Memoirs
A memoir is a non-fiction, self-written account of a person's memories which help in painting an intimate portrait of what it was like to be in the author's shoes. Due to the similar nature of memoirs and autobiographies, it's sometimes hard to differentiate between the two. However, one key thing to remember is that a memoir is usually less of a timeline of events and more, an informal, emotional picture of a person's life. Memoirs focus on things like past regrets and life lessons learned, whereas autobiographies concentrate on facts and things that happened.
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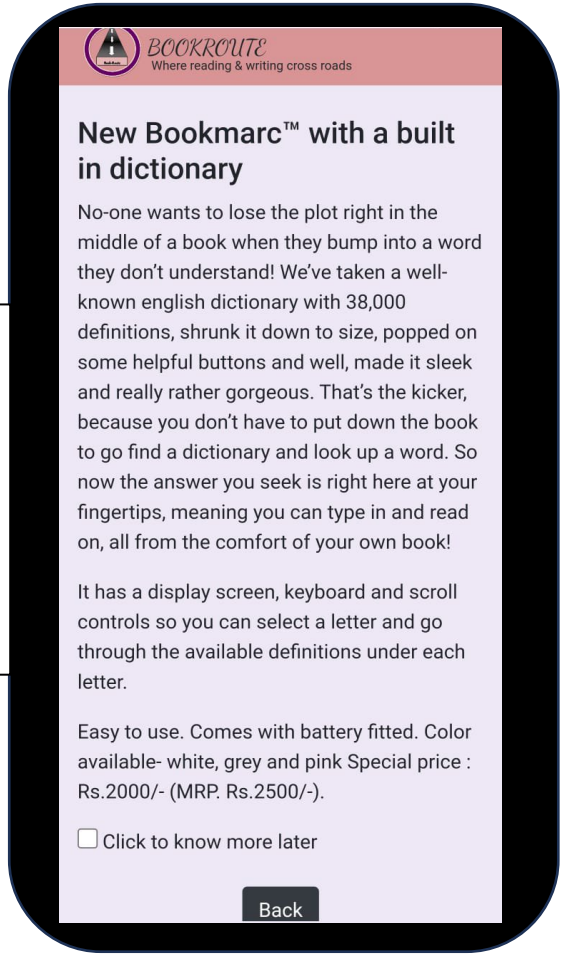
A9 – Page 9: Advertisement


BOOKROUTE
Where reading & writing cross roads
New Bookmarc™ with a built in dictionary
No-one wants to lose the plot right in the middle of a book when they bump into a word they don't understand! We've taken a well-known english dictionary with 38,000 definitions, shrunk it down to size, popped on some helpful buttons and well, made it sleek and really rather gorgeous. That's the kicker, because you don't have to put down the book to go find a dictionary and look up a word. So now the answer you seek is right here at your fingertips, meaning you can type in and read on, all from the comfort of your own book!
It has a display screen, keyboard and scroll controls so you can select a letter and go through the available definitions under each letter.
Easy to use. Comes with battery fitted. Color available- white, grey and pink Special price : Rs.2000/- (MRP. Rs.2500/-).
Click to know more later
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APPENDIX B

The instructions for free browsing mode -

"Thanks for participating in the online study. Imagine you have nothing to do in the next few minutes and you come across the following website. Use the time to browse the website and read whatever you find interesting. After the session, you will be asked to give some informal feedback about the website. If you are clear about what to do, please press the Next button."

APPENDIX C

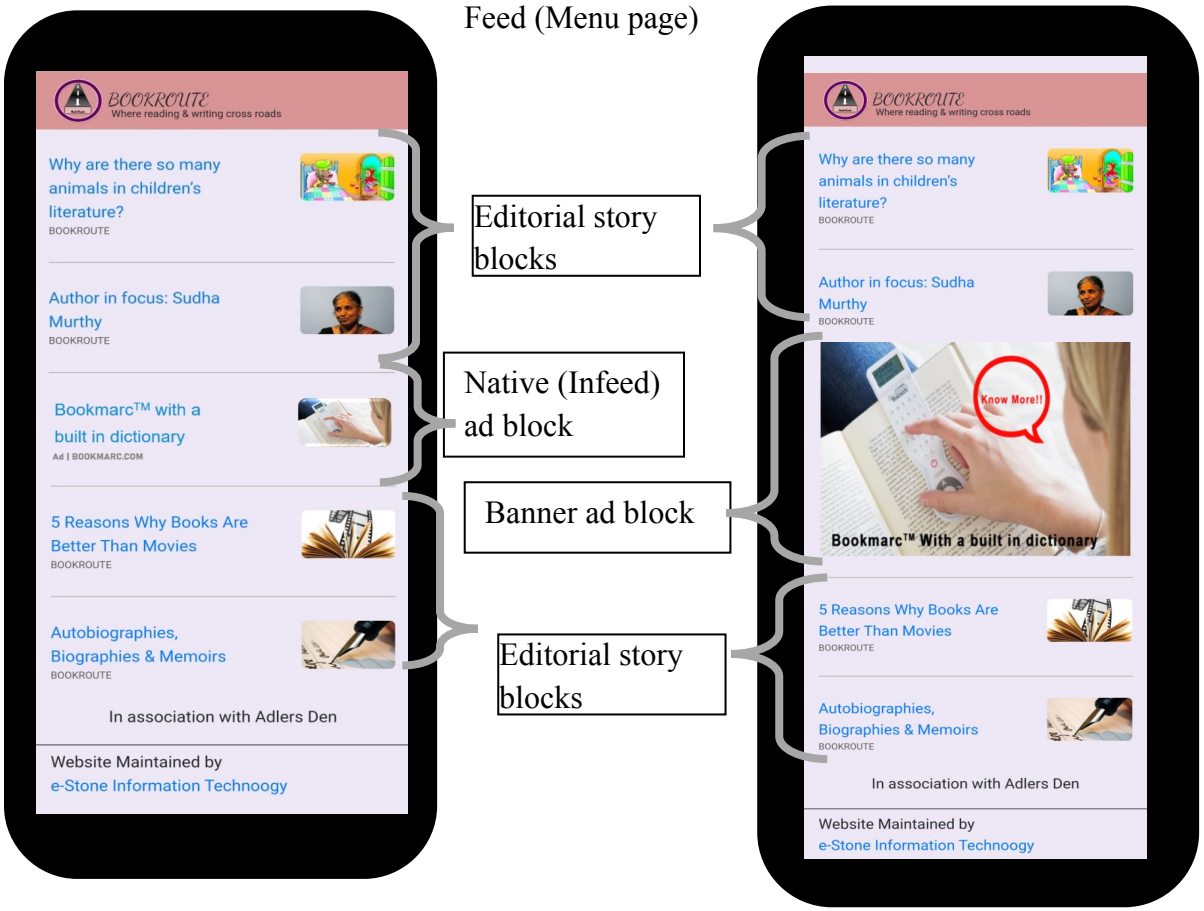
Instructions for goal-oriented viewing -

"Below are some questions for which you need to find answers on the website. Please read the questions carefully and note them on a paper. The answers will have to be submitted at the end. Once you proceed from this page, you will not be able to return to see the questions."

- *What is the name of the Disney movie mentioned?*
- *In which other language has Mrs. Murthy written apart from English?*
- *Which book format focuses on a person's emotional journey*

After the browsing session, you will be directed to the questionnaire. For best results, please use the website as you would in your normal web surfing. If you are sure of what to do, please press the Next button.

APPENDIX D


Feed (Menu page)
BOOKROUTE
Where reading & writing cross roads
Why are there so many animals in children's literature?
BOOKROUTE
Author in focus: Sudha Murthy
BOOKROUTE
Bookmarc™ with a built in dictionary
Ad | BOOKMARC.COM
5 Reasons Why Books Are Better Than Movies
BOOKROUTE
Autobiographies, Biographies & Memoirs
BOOKROUTE
In association with Adlers Den
Website Maintained by
e-Stone Information Technoogy
Editorial story blocks
Native (Infeed) ad block
Banner ad block
Editorial story blocks
Know More!!
Bookmarc™ With a built in dictionary

APPENDIX E

Measure	Questions/ items
Search questions for goal-oriented browsers Only	1. In which other language has Mrs. Murthy written apart from English? _____ 2. What is the name of the Disney movie mentioned? _____ 3. Which book format focuses on a person's emotional journey? _____
Ad recognition	Please select the advertisement you saw – Picture of correct advertisement and picture of dummy advertisement will be displayed
Ad intrusiveness	When I saw the ad- (1 for strongly disagree to 7 for strongly agree) 1. I thought it was distracting 2. I thought it was disturbing 3. I thought it was forced 4. I thought it was obtrusive 5. I thought it was interfering 6. I thought it was invasive 7. I thought it was intrusive
Irritation	Please rate the following statements (1 for strongly disagree to 7 for strongly agree) 1. I thought the ad was irritating 2. I thought the ad was phony 3. I thought the ad was ridiculous

Measure	Questions/ items
	4. I thought the ad was stupid 5. I thought the ad was terrible
Attitude towards ad	Please rate your overall feelings to the ad 1. I felt the ad was bad (1) ------ good (5). 2. I felt the ad was unpleasant (1) ----- pleasant (5) 3. My feeling towards the ad was unfavourable (1) ------ favourable (5)
Intention to click on ad	What are the chances that you will click on such an ad in the future? Very unlikely (1) ----- Very likely (5)
Attitude towards website	Please rate your overall reactions to the site 1. Terrible (1) ----- Wonderful (9) 2. Frustrating (1) ----- Satisfying (9) 3. Dull (1) ----- Stimulating (9) 4. Difficult (1) ----- Easy (9), 5. Inadequate designed (1) ----- Adequate designed (9) 6. Rigid (1) ----- Flexible (9) 7. Difficult to explore (1) ----- Easy to explore (9)
Intention to revisit website	1. How readily would you recommend that others visit this site? Extremely low (1) ----- Extremely high (5) 2. How likely is it that you would want to visit this site again? Extremely low (1) ----- Extremely high (5)

Measure	Questions/ items
	3. Given that I would have access to the site, I would intend to use it frequently. Strongly Disagree (1) ---- Strongly Agree (5) 4. Given that I would have access to the site, I would intend to be a heavy user. Strongly Disagree (1) ---- Strongly Agree (5)
Manipulation check	Please rate the following statements. Strongly agree (1) – Strongly disagree (7) When I was on the Bookroute website 1. I had a distinct identifiable purpose 2. I was looking up specific information 3. I was very focused 4. I was absorbed in finding specific information